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a current report on solid waste management

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STATE ACTIVITIES IN SOLID WASTE MANAGEMENT, 1974

This report (SW-158) was compiled
by RALPH J. BLACK
of the Office of Solid Waste Management Programs

U.S. ENVIRONMENTAL PROTECTION AGENCY
1975

INTRODUCTORY NOTE

Most of the State programs in solid waste management originated only within the past decade, under the stimuli of Federal planning grants and technical assistance authorized by the Solid Waste Disposal Act of 1965. The programs at this time are generally limited in staffing and scope of activity, although many have taken major strides, particularly in improving land disposal practices. To obtain an overview of the status of the State programs, EPA's Office of Solid Waste Management Programs asked each State agency to prepare a brief report covering their 1974 activities. These reports are reproduced here as received for staff informational use.

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U.S. ENVIRONMENTAL PROTECTION AGENCY
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May 1975

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SUMMARY OF SOLID WASTE MANAGEMENT PROGRAM

ALABAMA

October 31, 1974

(Format as suggested by OSWMP)

A. LAND DISPOSAL OF SOLID WASTE

State Legislation, Policy, and Program

The Alabama Solid Waste Disposal Act was enacted in 1969 and amended in 1971. Standards for disposal of solid wastes and rules and regulations for solid waste management have been adopted. Also, rules and regulations for the disposal of pesticides, pesticide containers, and other toxic chemical wastes have been adopted jointly with the Alabama Department of Agriculture and Industries. The law requires each county and municipal government to either jointly or severally provide for both the collection and health approved disposal of solid wastes.

a. Sites proposed by private or public agencies for use as a sanitary landfill are referred by the Division of Solid Waste to the Alabama Geological Survey for an evaluation of their geologic and hydrologic status. Soil borings, where required by the Survey, are provided by the applying agency. In consideration of the geologist's findings, the Division of Solid Waste makes a judgement as to the feasibility and acceptability of the site for disposal of the wastes proposed. Professional engineering design for sanitary landfills is recommended but not required unless specific site operational problems are involved or the site is planned for hazardous waste disposal. Water well monitoring is also recommended, but not required for sanitary landfills unless specific potential operational problems or problem wastes are involved.

b. The disposal of normal dewatered sludges from wastewater treatment plants and the like is permitted at most sanitary landfills. Animal feedlot wastes are normally handled by lagoons or land placement as approved by the Alabama Water Improvement Commission. Septic tank pumpings are permitted by some municipalities at certain manhole openings; some landfills provide diked drying beds for management of these wastes.

c. There is an approximate total of 143 active solid waste land disposal sites now recognized.

Of this total, those remaining as open dumps (some 15) and most of those rated as sub-standard landfill operations (some 18) are considered to present problems with leachate.

Of the present 110 sites operating as state approved sanitary landfills, possibly 30 to 40 percent may show evidence of intermittent leachate during periods of heavy rains, with less than 10 percent presenting potential "problems".

Only one site, an old and presently unused landfill, has a leachate collection facility, with the leachate disposed of in a sewage treatment facility.

d. There are 110 land disposal sites presently operating as state approved sanitary landfills. These landfills serve approximately 89% of the state's urban and rural population.

There are an unknown number of lagoons and temporary storage areas for toxic or potentially toxic wastes.

We have one state approved private industrial landfill disposal site for pesticides and like chemicals. We have had special geological investigations which resulted in some nine presently active public sanitary landfills at which limited quantities of toxic wastes may be disposed.

e. Our average landfill serves a population of less than 30,000 people, or approximately 30,000 tons (60,000 cu. yds.) of waste per year. We have almost no data on the expected life (ultimate capacity) of specific landfills. We are concerned about frequently made statements to the effect that, "Sanitary landfills serving municipalities will be filled in an average of less than five years". This is often interpreted to mean that after five years some means other than landfilling will be necessary. Landfills will always be needed, even with maximum application of source reduction, resource recovery, and the like. We estimate that total expansion of our present landfills for one year will require about 4,100 acre-feet of space. At an average landfill depth of 12 feet, this will require less than 0.6 square mile of land.

f. No state land use plan has been fully developed. It is expected that solid waste management will be a factor in such a plan.

B. ENFORCEMENT PROCEDURES

The state and local departments of health are jointly held responsible for the enforcement of the Solid Waste Disposal Act. State action is normally taken against counties, municipalities or industries which fail to or unduly delay the implementation of acceptable solid waste management. Local departments may act in cases involving local persons or businesses. The State Office of the Attorney General or County District Attorneys are the legal arms of the health department.

During the past 12 months, 38 administrative warnings have been issued by the Division of Solid Waste & Vector Control setting time limits for the correction of various infractions. At the present time, legal action is pending against one county, and a legal warning has been issued to another.

Numerous local court cases have been successfully brought against individual persons for illegal dumping, or failing to either subscribe to an available service or otherwise properly manage their solid waste.

C. SOURCE REDUCTION AND RESOURCE RECOVERY

Recycling centers are active either part or full time in most major towns and cities, and some 60 firms within the state receive some form of waste products for recycling. There is no State Legislation presently directly affecting this, and no state funds are available.

Some regional planning agencies are working on plans for resource recovery and legislation for source reduction is under consideration. There are no specific laws presently directed to benefiting resource recovery efforts.

D. HAZARDOUS WASTE MANAGEMENT

Pesticide use, sales and transportation are controlled under laws administered by the Alabama Department of Agriculture and Industries. This Department, along with the State Department of Public Health, have jointly adopted rules and regulations to control the land disposal of pesticides, pesticide containers, and other toxic chemical wastes.

Control of radiological wastes is under the State Department of Public Health, Division of Radiological Health.

Disposal of liquid wastes is under the control of the Alabama Water Improvement Commission.

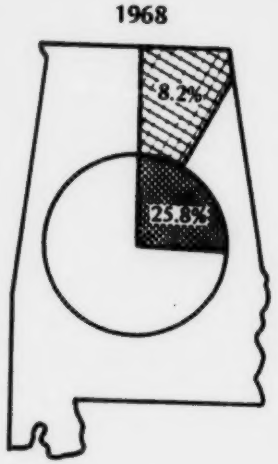
E. PUBLIC AFFAIRS

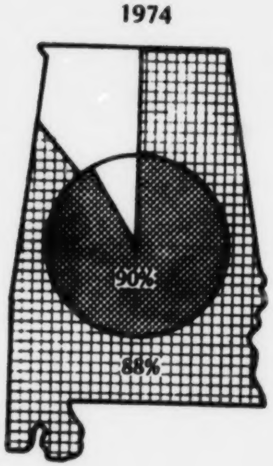
The Division of Solid Waste and Vector Control frequently participates in, and sometimes initiates, training and informational seminars and meetings concerning solid waste management. The division works closely with other agencies such as the Alabama Water Improvement Commission, the Air Pollution Control Commission, the Office of the Attorney General, the Department of Agriculture and Industries, the Alabama Environmental Quality Association, and others.

F. CRITICAL AREAS FOR FEDERAL ASSISTANCE

The Office of Solid Waste Management Programs can best assist the state as a technical assistance and information reservoir, particularly in the areas of hazardous waste management, resource recovery and source reduction.

ALABAMA
STATUS OF SOLID WASTE MANAGEMENT
1968 – 1974





Total Cities and Towns	392
Total Counties	67
Incorporated Population	2,048,000
Unincorporated Population	1,396,000
Total State Population	3,444,000

▩ 29 cities and towns served by sanitary landfills*
represent 7.4% of cities and towns,
25.8% of incorporated population.

▨ 3 counties served by sanitary landfills*
represent 4.5% of counties,
8.2% of unincorporated population.

Total state population served by sanitary landfill* 17.9%. Two counties (4.2% of state unincorporated population) served by organized county-wide collection services.

*Standards for sanitary landfill operation not established in 1968.

▩ 340 cities and towns served by approved** sanitary landfills
represent 87% of cities and towns,
90% of incorporated population.

▦ 56 counties served by approved** sanitary landfills
represent 84% of counties,
88% of unincorporated population.

Total state population served by approved** sanitary landfill 89%. Fifty-nine counties (90.0% of state unincorporated population) served by organized county wide collection services.

**37 additional cities and towns, and 8 additional counties are served by landfills failing to meet minimum standards.

STATE OF ALASKA

SOLID WASTE MANAGEMENT PROGRAM

Land Disposal of Solid Waste

The Alaska Department of Environmental Conservation has the primary responsibility for the promulgation and enforcement of regulations setting standards for the prevention and abatement of all water, land, subsurface land and air pollution. The Department is authorized to adopt regulations for the collection and disposal of garbage, refuse and other discarded solid materials from industrial, commercial, agricultural and community activities or operations. These regulations became effective on July 19, 1973, and are presently being implemented through the use of a permit system.

The State's Solid Waste Management Regulations prohibit any person from establishing, modifying, or operating a solid waste disposal facility without a permit. To obtain the permit, it is necessary for an applicant to submit the following data:

1. A topographic map or aerial photograph clearly marking the boundary of the disposal site and showing all pertinent features such as buildings, surface water diversions, fences, access roads, wells within one-quarter mile of the site and sign locations;

2. Data on ground water depth and direction of movement relative to populated areas and a description of soil characteristics in the disposal area.

3. A narrative report describing operating procedures including the hours and days the site is open to public use, burning policy, duty schedule for site attendants, frequency of cover material application, an estimate of the population and the area served, wastes quantities received, emergency operating procedures and available operating equipment;

4. A certificate of compliance with local ordinances and zoning requirements.

By evaluating the data submitted with the permit application (often an on site survey is also necessary) it is possible for the Department to determine fairly accurately whether the proposed disposal site will contribute to ground or surface water pollution. If such a possibility exists, the landfill application may be denied and the applicant required to amend his proposal making provisions for leachate collection or treatment as necessary.

In addition to plan review of permit applications, the solid waste management regulations contain several operating requirements designed to protect the ground and surface waters of the State. They read as follows:

1. The disposal of putrescible waste in areas subject to permafrost or leachate generation is restricted and shall be allowed only in conjunction with special procedures approved by the Department;

2. Solid waste shall be deposited in a manner to prevent waste materials, leachate or eroded soil particles from entering the waters of the State;

3. A minimum separation of two feet shall be maintained between putrescible solid waste and the anticipated high groundwater table. Non putrescible and non-water soluble materials such as brick, stone, concrete and similar materials may be deposited below the anticipated high groundwater table if such deposition will result in a nuisance free operation and no pollution to the groundwaters;

4. Surface water drainage from areas outside a landfill shall not be allowed to flow over or through a landfill.

When these regulations are used in conjunction with the plan review and permit program, new landfills should protect the ground and surface waters of the State.

By the definition in Alaska's regulations, landfills are authorized to accept dewatered sewage sludge but septic tank pumpings and wet sludges are not permitted for disposal. Animal feedlot waste is, for all practical purposes, non-existent and does not present a problem. Septic tank pumpings are normally disposed of through the use of sewage treatment plants when available or lagoons. The problem of septic tank pumpings disposal is handled through the Department's wastewater section.

Alaska has approximately 200 solid waste disposal facilities used by incorporated communities and villages. However, this number would be nearly double if all the small promiscuous dump sites in the State were included. While leachate is known to exist in many of the landfills within the State, it is considered to be a problem in only 12 of these landfills. At the present time three landfills have monitoring wells, and two landfills have leachate collection and treatment facilities in operation.

The State has issued 42 permits for landfills or incinerator-landfill facilities. Data compiled for the State solid waste management plan shows that approximately 30 percent of the State's population is served by approved sites. This figure is expected to rise to approximately 50 percent by next summer when the City of Anchorage landfill will be operated in compliance with State regulations. The State presently does not have any sites approved for the acceptance of hazardous/toxic waste.

The State does not have data regarding the ultimate capacity of landfills.

To date, solid waste management has not been a significant factor in State land use planning. However, land use planning is expected to play a bigger role in the near future and solid waste management will likely be included in this planning function.

Enforcement Procedures

Enforcement procedures are initiated through the issuance of a notice of violation when solid waste management practices are being conducted contrary to State regulations. The notice of violation cites the appropriate statute or regulation that is being violated, describes the violation and requires the violator to submit a report to the Department within a specified time detailing the corrective actions planned. If no action is taken by the violator to correct the problem, he is given two additional notices with all correspondence being sent by registered mail with return receipts requested. If no action has been taken following the third notice, the case is referred to the Attorney General's office for prosecution. Action is taken either on a civil or criminal basis depending on the nature of the violation. During the past 12 months, 3 solid waste management cases have been referred to the Attorney General's office for settlement. The first two were settled out-of-court and the third case is still pending.

Source reduction and Resource Recovery

The Department encourages resource and energy recovery from solid waste and defines a reclamation facility as a facility in which solid waste is stored, dismantled or reprocessed to recover salvagable materials for purposes of sale or reuse. Any person wishing to operate a reclamation facility must submit an application and obtain a permit from the Department prior to operating the facility.

Regional solid waste management programs are encouraged by the Department and are authorized by State Statute. This authority is given to organized boroughs, which are a form of regional government. To date, 4 boroughs are operating complete area-wide or regional solid waste management programs and 2 others are providing solid waste service to a portion of their incorporated area.

While the Department supports local and regional solid waste management authorities, there is no State funding available to these governments. Although the Department supports local and regional solid waste management authorities through technical assistance and training programs, there is no State money available to fund these programs. It is hoped that a revenue sharing bill will be passed in the near future which will provide monetary resources for those programs approved by the Department.

Resource recovery planning is being conducted by the State and the Greater Anchorage Area Borough as part of their comprehensive solid waste management plans. However, the Department normally recommends energy recovery rather than resource recovery so that heat and power may be recovered from the combustion of solid waste. In a cold weather state such as Alaska, the recovery of valuable Btu's for heat and power is very practical.

The State Solid Waste Management Plan recommendations include the development of a State government purchasing policy, whereby items manufactured from recycled materials would be given preference over virgin materials when these commodities are at least equal in quality, availability, and price. To date, there have been no source reduction programs initiated in the State.

Hazardous Waste Management

The Department of Environmental Conservation has the statutory authority to set policy and regulate the transportation, processing and disposal of hazardous and toxic waste material. The State Solid Waste Management Regulations specify that permittees operating solid waste disposal facilities shall obtain specific Departmental approval for the processing and disposal of all hazardous wastes. Hazardous wastes are defined as those wastes which are capable of causing injury, disease or impairment of health or property damage, including but not limited to poisions, pesticides, acids, caustics, infectious or pathological wastes, radioactive materials, explosive materials and oil and petroleum products. Although the Department does have full control over disposition of toxic and hazardous materials, this problem is still relatively minor.

An in depth survey has not been conducted to identify and classify the toxic and hazardous wastes disposed of in Alaska. However, in the absence of major processing industries and chemical manufacturers, toxic and hazardous wastes are not a significant problem at this time. Pesticide residues and petroleum wastes represent the items generally requiring special disposal care. Highly toxic pesticides are seldom used and most chemical applications are restricted to the relatively non-toxic malathion; 2,4-D and rotenone formulations. Alaska's agriculture industry is small and most pesticides are applied by government agencies, which generally follow the Department's recommendations for application and residual disposal. It is generally assumed that waste oil is the most significant hazardous waste problem in the State.

Public Affairs

A major portion of the Department's Solid Waste Management program consists of providing technical assistance and public information to the State's citizens and communities. The solid waste management staff provides assistance in revising existing programs and makes recommendations on techniques and methods that might be incorporated in new systems. Staff members inspect proposed disposal sites to determine their acceptability from an environmental stand point and make recommendations on how sites may be improved to meet environmental management objectives.

The Department has the latest information in the form of publications and brochures available on operating techniques and new innovations as well as equipment selection and performance. The Department also has eight 16mm films and one filmstrip, which may be borrowed.

The Department also sponsors periodic training courses, which have included a rural transfer system seminar and a landfill operators workshop. These training courses have been conducted on an annual basis and are open to all individuals interested in solid waste management. Presentations are given by Departmental staff with assistance from knowledgeable guest speakers.

In addition, the staff maintains a prepared slide presentation, which is given upon request to various public gatherings. This slide presentation depicts Alaska's problems, present solid waste disposal techniques, both acceptable and unacceptable, and shows recommended operating practices for the various geographic regions within the State.

The Department makes maximum utilization of the news media to obtain the fullest possible public support on all environmental issues. As such, the Department has very good working relations with the press and is able to make its programs well known to the various public interest groups and conservation societies, thereby extending our effectiveness.

Suggested Federal Assistance

The federal government could be of greatest assistance to the State of Alaska by realizing that "blanket regulations" written for the whole country do not necessarily apply in their entirety to the State of Alaska. By making this realization, it would be possible to more fully implement the State's program, which advocates incineration rather than the development of sanitary landfills.

The federal government could also develop increased technical assistance programs, to aid in the presentation of training courses. The development of a program whereby federal employees could be assigned to the State to work directly with the state solid waste management programs would also be helpful. In this manner it is felt that both the State and federal government would benefit by becoming more fully cognizant of each others problems.

SUMMARY OF ARIZONA'S SOLID WASTE MANAGEMENT PROGRAM

Arizona's primary statutory authority dealing with land disposal of solid waste are found in Arizona Revised Statute 9-441, requiring the incorporated cities and towns, and the counties, to provide dumping grounds; and A.R.S. 36-136 G 10., giving the Arizona Department of Health Services the authority to promulgate and adopt rules and regulations for solid waste storage, collection, transportation, processing and disposal. In addition, the Department administers a Water Pollution Control Act that includes prohibiting pollution of the State's water through improper solid waste disposal, and an Air Pollution Control Act in which the open burning of solid waste is prohibited.

The rules and regulations adopted pursuant to A.R.S. 36-136 G 10. are administered by the Bureau of Sanitation, Division of Environmental Health Services. Regulation 2-4-4.2 requires Departmental approval for any method of solid waste disposal prior to the start of operation. Current policy is to have plans submitted to the Bureau for approval. The Bureau reviews the plans to ensure that they are geologically and hydrologically acceptable, and that the operation plan is adequate.

The Bureau does not have a classification system for landfills according to the types of waste that are accepted. The majority are, however, designed to accept municipal and construction debris types of waste only. Of the 73 approved sanitary landfill operations in this State, 58 are small, one-man trench operations with an ultimate capacity of less than 150,000 tons; 6 would probably be in the 150,000 to 500,000 ton range, and 9 with an ultimate capacity greater than 500,000 tons. Some of the larger landfills have made provisions to accept limited quantities of industrial types of waste. However, if the waste is of a toxic or hazardous nature, it is usually required to be rendered harmless prior to disposal. The authority for this request comes from the Department's Regulation 2-4-1.3 D.

The Bureau is not aware of any landfills where leachate has become a problem. There are no monitoring wells or collection and treatment facilities in existance, or even planned for in the near future. The Bureau of Water Quality Control is developing a groundwater monitoring program and, depending largely upon what their data reveals, the requirements for leachate control will be changed.

Special types of waste, including medical waste, sludge from wastewater treatment plants, septic tanks and feedlots, are not prohibited from landfills. There is a long-standing Department regulation providing for specially designated areas that can accept septic tank pumpings.

Enforcement procedures available to the Department include filing misdemeanor charges in the justice courts of the county where the violation occurs. A second option is the issuance of a Cease and Desist Order for violation of the Department's rules and regulations and a third is to issue an Order of Abatement for violation of Air Quality Control regulations. In these cases, the offending party can request a hearing. Then, if the operation continues to be in violation, an injunction is sought in Superior Court.

Another control or regulatory procedure the Bureau uses is withholding approval for plans. Under a subdivision plan review program, provisions must be made to ensure proper solid waste disposal. The only acceptable land disposal method that the Bureau will accept is sanitary landfill.

The Bureau also reviews these plans to determine if an approved collection service is provided. If not, then self-haul is allowed only if the subdivision is located within 5 miles of an approved disposal site.

Governmental resource recovery programs have not been developed to a great extent in Arizona. The State does not have specific legislation or programs to require resource recovery, although the Bureau encourages and supports existing local programs. The only legislation that supports resource recovery is A.R.S. 9-1221., which provides for the formation of corporations for the purpose of issuing bonds and applying the proceeds to construct or finance pollution control facilities.

The City of Phoenix is seriously considering an energy recovery facility. Other cities in the Metropolitan Phoenix area are experimenting with source reduction by realigning collection routes. Commercial establishments with high wastepaper content are collected separately, which then can be sold to scrap paper dealers. The City of Casa Grande has initiated separate collection of newspapers for residential collection. Primarily, resource recovery is conducted by private industry and supported by civic groups and service organizations.

Because the Department is responsible for the regulation of sewerage systems and solid waste management, the regulation of hazardous wastes is also assumed and, in some instances, implied. The Arizona Atomic Energy Commission has jurisdictional authority over radioactive materials, but other than that, there is no comprehensive hazardous waste act placing responsibility with any single agency. The Department is preparing a hazardous waste bill to submit to the State's 32nd Legislature this year (Spring, 1975) giving the Department specific responsibility for hazardous waste management.

Currently, if an industry is generating hazardous wastes, they usually have to make arrangements for hauling the materials to a Class 1 site in another state. Occasionally, the need arises to dispose of small quantities of hazardous wastes. In these cases, the Bureau tries to find an acceptable solution within the State, otherwise these small quantities also will have to be shipped out of state.

The Bureau is in the process of surveying Arizona manufacturing industries for quantities and characteristics of their waste materials. Two hundred industries, representing each major Standard Industrial Classification group between 19 and 39, have been surveyed. A listing of the waste has been prepared. The remaining 1,200 industries will be surveyed within the next two years and a final report will be prepared at that time.

There is a limited technical assistance program available to help local governments in the preparation or evaluation of solid waste management systems and plans. Sanitary Landfill Site Selection and Development Guidelines and an Engineering Bulletin for operation of a sanitary landfill have been prepared. The Bureau has conducted an 8-week training program for landfill operators and is developing a similar program for collection personnel.

Both technical and general information on solid waste management is prepared and distributed to the general public. Requests for speakers and programs are most always fulfilled. The Bureau works directly with the Advisory Commission on Arizona Environment and local governmental associations, such as the Association of Counties, the League of Arizona Cities and Towns, and other agencies, especially on matters concerning legislation. Whenever the Bureau is conducting some phase of a program that effects a particular industry, their representative association is contacted.

The most critical area of federal assistance required in Arizona is, of course, of the financial nature. The small communities and rural counties are in particular need of money to help in construction and possible operation of solid waste systems. Next priority is in hazardous waste management, particularly as it is related to land disposal. There is a great need for more technical information on procedures for handling and disposal of these types of waste. Undoubtedly, what would be of great assistance is a listing of the types of services or programs that E.P.A makes available to the states.

Prepared By:

Barry Abbott, Manager
Solid Waste Section
Bureau of Sanitation
Division of Environmental Health Services
Arizona Department of Health Services

STATE OF ARKANSAS
DEPARTMENT OF POLLUTION CONTROL & ECOLOGY

Report on Solid Waste Management Activities
November, 1974

The Arkansas Solid Waste Management Act of 1971 is "An Act Relating to Solid Waste Disposal, Defining Terms; Granting Authority for the Adoption of Municipal and County Solid Waste Management Systems; Requiring Permits for Disposal Systems; Empowering the Arkansas Pollution Control Commission to Administer and Enforce the Act and to Adopt Rules and Regulations; Outlining the Powers and Duties of the Commission; Providing Remedies and Prescribing Penalties for Violations; Providing for Severability; and Declaring an Emergency."

The Arkansas Solid Waste Disposal Code was adopted in 1973 pursuant to the Solid Waste Management Act of 1971, and contains rules and regulations concerning the permitting and operation of solid waste disposal facilities and storage, handling, collection and transportation of solid wastes.

The Solid Waste Control Division of the Department of Pollution Control & Ecology presently consists of four field inspectors and a division head. The Division has available to them secretarial help and a Department staff geologist on a part time basis.

A. Land Disposal of Solid Waste

1. The Arkansas Solid Waste Management Act and Solid Waste Disposal Code requires that all solid waste disposal sites be permitted through the Department of Pollution Control.

An application for site approval, containing all the basic information necessary for evaluation of the operation and the physical characteristics of the site must first be submitted to the Department's Solid Waste Control Division (forms are made available). The Department geologist may be called in to perform a geological reconnaissance of the site to determine the surface or sub-surface water pollution potential. Based on the information gained, the Department may make specific engineering requirements concerning the planning and design of the sanitary landfill to reduce or eliminate water pollution problems.

After approval of the site for use as a sanitary landfill, the applicant must submit detailed engineering plans produced by a registered professional engineer. These plans are subject to staff review and if considered adequate, the application is referred to the Pollution Control Commission for final approval to issue a permit.

After a sanitary landfill is permitted, it is the responsibility of the Division to conduct periodic inspections of the operation to determine compliance. If major compliance problems occur that cannot be resolved through Division or Department level action, legal action may be taken.

2. Section 6(f)(8) of the Solid Waste Disposal Code states "Sewage solids or liquids, septic tank pumpings, and other liquids, semi-liquids, or hazardous substances (including but not limited to oil sludges; dye concentrates; pathological, infectious and biological wastes; radioactive material; waste chemicals; highly flammable or volatile substances; unexpended pesticide containers; pesticides; raw animal manure and explosives) shall not be discharged to a sanitary landfill until written

approval has been obtained from the Department. Special provisions may vary from site to site depending upon local conditions, and will be specified in the approval letter."

The burden of proof that there will be no water pollution potential resulting from disposal of such wastes may be upon the party requesting approval.

3. There are presently 45 permitted sanitary landfills and six permitted municipal solid waste incinerators operating within the state.

Though leachate has been reported at most of the landfills at one time or another, only about five sites could be considered as having a problem of great concern and two other permitted sites have been closed due to, at least in part, leachate problems.

Presently no monitoring wells have been required to be placed at any permitted sanitary landfill.

Of the permitted sanitary landfills that have a leachate problem, only one operation has been ordered to monitor leachate and runoff water and dispose of the water in a permitted sewer system whenever conditions reached a level that required treatment before discharge.

4. Of the 45 operating permitted sanitary landfills, 35 serve city and county residents totaling approximately 30% of the state population. (About 4% of the state population is served by permitted incinerators.) The remaining permitted sites serve private concerns such as industries.

Presently there are no sites permitted specifically for the purpose of disposal of hazardous/toxic wastes, though approval has been given for a few landfills to accept small quantities of certain of these wastes.

5. There are only four sanitary landfills operating in the state with an estimated total capacity large enough to fall into the 150,000 to 500,000 ton category.

6. Solid waste management is not a factor in State land use planning since no land use planning legislation has been passed.

B. Enforcement Procedures

Every effort, within reason, is made on the Division or Department level to bring violators into compliance with existing Acts, rules or regulations. If compliance is not gained, the Pollution Control Commission may issue a compliance order or legal action may be brought against the violator in the form of a civil suit filed by attorneys retained by the Department for this purpose.

In the past 12 months, one permit has been revoked and one suspended through Commission orders.

Several Department level compliance hearings with city and county officials concerning disposal facilities were held. Compliance was gained in several of these cases and one suit is pending.

Seven law suits have been filed against city and private operators of non-complying disposal sites in the past 12 months with only two being tried to date. Of these two suits tried, one was against a large city and the other a small city, resulting in little action against the latter.

C. Source Reduction and Resource Recovery

The state has passed no legislation affecting resource recovery.

The Department of Pollution Control & Ecology actively encourages county, municipal, civic and private organizations to get involved and develop resource recovery programs. There are no state funds available to assist such programs.

The Department has contracted with Midwest Research Institute to conduct a study of agricultural and industrial wastes generated within the state. One purpose of this study is to determine the feasibility of recycling of these wastes.

D. Hazardous Waste Management

The only state regulations concerning hazardous waste management are in the Arkansas Solid Waste Disposal Code (Section 6(f)(8) quoted earlier) and the Arkansas Water Quality Standards Regulation No. 2, Section 5(k) limiting the concentrations of such wastes in receiving waters of this state.

E. Public Affairs

Information on solid waste control in Arkansas is disseminated in the form of speeches, news releases, films, slide presentations and literature by the Public Information Office and Department staff. Professional and civic organizations, schools of all levels, news media, trade journals and the general public are recipients of this material.

The Department cooperates with organizations, such as the League of Women Voters and other government agencies, to educate the public in matters of solid waste management. This is achieved through seminars, training programs and television and radio broadcasts.

Copies of state laws and regulations concerning solid waste are mailed to affected parties, such as county judges, and are available to anyone upon request. The public also has access to transcripts of public hearings, annual reports and The Monitor, a monthly newsletter -- all dealing with pollution control in Arkansas.

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STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY
RONALD REAGAN, Governor

DEPARTMENT OF HEALTH
714-744 P STREET
SACRAMENTO, CALIFORNIA 95814

January 13, 1975

Mr. Charles T. Bourns
Hazardous Materials Branch
U. S. Environmental Protection Agency
100 California Street
San Francisco, CA 94111

Dear Mr. Bourns:

This letter is in response to your request of December 12, 1974, for information regarding California's Hazardous Waste Management Program.

This Department was assigned the responsibility of developing a hazardous waste management program by Assembly Bill 598, 1972 Legislative Session, now Section 25100 et seq., Health and Safety Code. The law requires the Department to adopt regulations for the handling, processing and disposal of hazardous and extremely hazardous wastes to protect against hazards to the public health, domestic livestock and wildlife.

In addition to requiring the adoption of hazardous waste regulations, the law required the Department to: (1) establish procedures for evaluation and coordination of research and development regarding methods of hazardous waste handling and disposal; and to conduct appropriate studies relating to hazardous wastes; (2) maintain a technical reference center on hazardous waste disposal, recycling practices, and related information for public and private use; (3) render technical assistance to state and local agencies in the planning and operation of hazardous waste programs; and (4) provide for appropriate surveillance of hazardous waste processing and disposal practices in the state. The bill further established a seven-member technical advisory committee, composed of cross-sectional representation, to be utilized by the Department in developing the program.

In response to the mandates of AB 598, interim regulations were developed, presented at public hearings, and subsequently adopted on July 2, 1974. The additional tasks noted above (1-4) are in various stages of development and the adoption of more comprehensive regulations is scheduled for early 1975.

The Regional Water Quality Control Boards are authorized to adopt water quality control plans, prescribe waste discharge requirements, and to perform other functions concerning water quality control within their respective regions subject to the State Water Resources Control Board review or approval. The State Board licenses liquid waste haulers and requires the liquid waste be disposed of in accordance with regulations adopted by the regional board and on a site approved by the regional board.

The Department of Health has adopted the State Water Resources Control Board's California Liquid Waste Hauler Record to serve as the manifest pursuant to Section 25162 of the Health and Safety Code. The producer of a hazardous waste, whether liquid, solid, sludge, or other must initiate and properly identify said waste, disclosing the nature of the hazard associated with it, whether toxic, flammable, etc., and the type and composition of the waste. The transporter and disposal site operator are also responsible to complete portions of said manifest.

No state-wide surveys have been conducted to determine the amount of hazardous wastes being generated. It is estimated, however, that between 1 and 2 million tons are generated annually.

If additional information is required, please feel free to call at your convenience.

Sincerely,

Richard F. Peters, Chief
VECTOR CONTROL SECTION

Harvey F. Collins

Harvey F. Collins, Ph.D., P.E.
Supervising Engineer
Waste Management Unit

HFC:gd

TO: GOVERNOR EDMUND G. BROWN, JR.
AND MEMBERS OF THE CALIFORNIA LEGISLATURE

We are pleased to submit to you this first annual report of the State Solid Waste Management Board. This report represents an accounting of the Board's legislative mandates, achievements and future objectives, and covers the period from the Board's organization in May 1973 through December 1974.

We are proud that in the 20 months since the initial organizational meeting of the State Solid Waste Management Board, we have met the legislative mandates requiring the formulation of a comprehensive State Solid Waste Management Policy and State Solid Waste Resource Recovery Program. The complete State program is summarized in the attached report and includes the legislatively mandated statewide Solid Waste Management Policy and Minimum Standards; Guidelines for Solid Waste Management Plans; a Resource Recovery Program; a Litter Management Report; and results from a study of financing needs and alternatives for local government solid waste disposal facilities.

With these policy and planning activities completed, the Board will now enter the implementation phase, which is aimed towards upgrading existing local solid waste management operations for the protection of public health, enhancement of the environment, and the preservation of natural resources. Also involved is the encouragement for the acceleration of the recovery of materials and energy from the solid waste stream.

Our proposed 1975-76 budget is designed to implement a significant part of the State Solid Waste Management and Resource Recovery Program. The past period completes the Board's initial program planning phase. It is now clear that the implementation of a strong Solid Waste Management and Resource

Recovery Program for California requires assignment of additional legislative authority to the Board. The specific required authorities are outlined on pages and of this report. More specific information on additional legislative needs is contained in the adopted Resource Recovery Program and in the Litter Management Report.

There are difficulties ahead in implementing a strong Resource Recovery Program. However, the continuing economic and balance of trade concerns at the National and State level emphasizes the need for conserving our non-renewable natural resources by recovering usable materials and energy from the waste stream. Fruition of the Board's programs and policies will place California among the nations leaders in innovative and effective statewide solid waste management and resource recovery activities. In undertaking these future tasks we anxiously look forward to assisting local governments which have the prime responsibility for developing and implementing an environmentally sound solid waste management plan based on the Board's policies and standards.

These legislatively mandated programs and policies were due by January 1, 1975. The Board has successfully accomplished these mandates, and is confident that the legislative intent to improve the environment by fostering the utilization of waste for energy and recycling of materials contained therein has been given prime importance and direction. The Board is also confident that the State Minimum Standards will upgrade the conventional collection and disposal operations so as to better protect the public health, as well as the land, air, water and aesthetic amenities of the State. Summaries of these documents will be forwarded to all members of the legislature in the near future.

Respectfully submitted,

Alfred M. Dias
Chairman

1973-74 HIGHLIGHTS

- Appointment of the State Solid Waste Management Board by the Governor, Senate and the Assembly.
- Appointment of the 25 member Solid Waste Management and Resource Recovery Advisory Council by the Governor.
- Appointment of a Board Executive Officer, recruitment of staff and formulation of operating procedures.
- Adoption of Guidelines for the Preparation of County Solid Waste Management Plans in both narrative and codified forms.
- Conducted by the staff, a series of statewide workshops to assist the counties in the development of their solid waste management plans.
- Preparation of the Litter Management Report by the Advisory Council and adoption by the Board.
- Preparation by the Advisory Council of an Agricultural Wastes Report, which was approved by the Board. Appointment by the Board of a special agricultural waste committee to study the management and reutilization of agricultural wastes.
- Development by the Advisory Council of a Resource Recovery Program which was revised after public hearings, and then adopted by the Board.
- Establishment of a public information program, including newsletters, news releases, technical bulletins, displays at the state fair, and guest speakers at public and professional meetings.
- Adoption of the State Policy and Minimum Statewide Standards which were developed with the assistance of the Advisory Council, followed by extensive public review including statewide public hearings.

- Holding of a "waste to energy" fact finding meeting to help define the problems involved in utilizing technology for energy conversion in California.
- Sponsoring of successful legislation (SB 1797 of 1974) which gives the Board authority to control proposed new waste disposal facilities in California to assure conformance with locally developed solid waste management plans.
- Provision, by Board staff, of technical assistance to local governments in the review of local solid waste management operations and plans, and to other state and federal agencies regarding solid waste aspects of proposed private and public projects and developments.

SOLID WASTE MANAGEMENT PROJECTS

Colorado Department of Health

November 1974

A. STATE LEGISLATION

In 1971, the Colorado General Assembly amended the State Act of 1967 providing for regulatory control of disposal sites and facilities. This legislation sets forth minimum standards for all disposal sites and facilities and requires the submission of an engineering report and operation plan on all new sites and facilities. The Department is required to promulgate rules and regulations pertinent to engineering design and operating criteria.

(a) The engineering report design criteria are objectively stated requiring the applicant to submit information describing methods for keeping surface and ground water out of the landfill. The report and plan must contain engineering, geological, hydrological and operational data required by Department regulations. The plan review is coordinated with air and water quality control divisions.

(b) The processing and disposal of sewage sludge and septic tank pumpings are covered in proposed amendments to the Department Regulations. These amendments were presented for public comment and are being redrafted for submission to the Board of Health.

Surface drainage from animal feed lots must not violate State water quality standards. Animal waste received at landfill sites must be disposed of in accordance with minimum standards. Animal waste discharged on the land and used as fertilizer are not regulated other than by laws pertaining to nuisances.

(c) Currently the total number of disposal sites in Colorado is 254. Two sites in the Denver Metropolitan Area were suspected of causing water pollution. One is located near the South Platte River and the other near Clear Creek, a stream tributary to the South Platte. Surface and ground monitoring data did not indicate a violation of existing stream quality standards. The site near Clear Creek was a demonstration project to evaluate the effectiveness of natural barriers in preventing water pollution. The operation plan considered hydrological, geological, topographic and climatological data. To date, leachate has not caused a violation of surface or ground water quality standards. Technical reports have been compiled on both sites.

(d) All of the 254 sites have "Certificates of Designation" issued by appropriate County Commissioners. They also have authority to withdraw certificates for non compliance after reasonable notice and public hearing. Approximately 45% of the States population is served by sites that comply with Department regulations. None of the designated sites have been approved for disposal of hazardous/toxic waste disposal.

(e) This Department keeps no records of site capacity.

(f) Site selection and development of solid waste disposal sites may be designated to be an activity of state interest in local governments according to our Land Use Act. If this is done, then solid waste management becomes a significant factor in land use planning. The legislation also requires solid waste disposal sites to be protected from flooding.

B. ENFORCEMENT PROCEEDURES

Department policy requires all solid waste disposal sites to be inspected by the district engineer at least once a year. If the site is not in compliance with the State Act and Department Regulations the inspecting engineer explains to the site operator and officials what is required to bring the site into compliance. If an agreement is reached and the site shows improvement when it is rechecked a short time later, no further action is taken as the site is being brought into compliance. If no agreement can be reached or if on reinspection, the site shows no improvement, the district engineer prepares a letter for the signature of Dr. Dreyfus, Executive Director of the Health Department to the county commissioners specifically requiring the site be brought into compliance. If on reinspection the site shows improvement, no further action is required. Otherwise, a "Cease & Desist" order is sent if the site is considered a public nuisance. "Cease & Desist" orders were sent in period 12-1-73 and 11-30-74. The Certificate of Designation can also be revoked by the county commissioners or by a district court for noncompliance with Department regulations.

C. SOURCE REDUCTION AND RESOURCE RECOVERY

Current state legislation enables regional solid waste management or resource recovery authorities by intergovernmental agreement. A proposal to enable the formation of an Urban Service Authority in the Denver Metropolitan Region was placed on the ballot in 1973 but defeated by the electorate.

Resource recovery planning is being initiated through the Denver Regional Council of Governments. A task force comprised of public officials and representatives of industry and this Department prepared a report and obtained financial support to investigate alternative resource recovery systems. State funds are not available to local government or private industry involved in resource recovery. There are not tax laws or purchasing policies beneficial to resource recovery.

In 1972, a bill was introduced requiring all bottles and cans containing beer or soft drinks be recycled. It did not pass. The present State Act allows for separation of material for salvage at designated sites provided it does not interfere with the landfill operation. Proposed amendments to Department regulations provide for planning of resource recovery operations at designated sites.

Other groups promoting resource recovery in Colorado are Keep Colorado Beautiful, Denver Regional Council of Governments, Columbine Glass, Adolph Coors Company, Colorado Fuel and Iron Company and Friedman Paper Company. These agencies and companies are actively promoting resource recovery of specific materials. In addition, Keep Colorado Beautiful maintains a list of companies in the Denver Metro area who buy or accept various components of solid waste. Coors recently completed a study on pryolysis of solid waste from the Denver Metro area to produce a fuel gas.

D. HAZARDOUS WASTE MANAGEMENT

The proposed amendments to the Department Regulations contain a section on disposal of hazardous waste. Engineering design and operating criteria are described and an engineering report and operation plan for each waste considered hazardous or toxic is required. Colorado's hazardous waste survey is the initial step in development of a State hazardous waste management plan.

E. PUBLIC AFFAIRS

This Department, in cooperation with the Environmental Protection Agency and local Health Departments, conducts regional training programs throughout the State. Additionally, this Department sponsored three Statewide solid waste workshops. These workshops were cosponsored by EPA, Division of Local Governments, and the National Solid Waste Management Association.

Operator training is provided at designated sites for operating personnel. Public meetings are held to inform and instruct county commissioners and municipal officials concerning metnods of obtaining and maintaining compliance with minimum standards.

Each of the 63 counties are urged to develop and implement countywide plans. These are coordinated with planning activities of the 13 management and planning regions designated by the Governor. To date, 7 of the 13 regions have developed regional Solid Waste Management Plans and 12 of the 63 counties are implementing countywide systems.

F. CRITICAL NEEDS FOR FEDERAL ASSISTANCE

There is a need for continued Federal support of State projects which include conducting surveys, planning, training, providing technical assistance and public information and conducting demonstration projects.

Federal guidelines and technical assistance programs provide valuable assistance to State and local entities as they evaluate alternatives for processing, resource recovery and disposal. These should be continued with emphasis on hazardous and special waste processing and disposal problems.

Additional incentives, other than enforcement, are needed to promote resource recovery, hazardous/toxic waste management and maintain compliance with sanitary landfill requirements. Smaller communities (less than 5,000 population) have difficulty obtaining compliance and need additional incentive.

Orville F. Stoddard, P.E.
Director Solid Waste
Management Projects

INTRODUCTION

Connecticut's solid waste management program seeks to solve, on a statewide, total system coordinated basis, the age-old problem of waste disposal. The State's problem is augmented by Connecticut's density of population; by the small land area available for use in waste disposal; by the necessity to conserve and protect existing threatened land, air and water resources; by the people's propensity to produce a high-per-capita volume of wastes because they live in a highly developed urban-industrial society with its characteristic high volume of waste production; and by the strong undercurrent of environmentalism and protectionism that has developed during the last three or four years, within the State.

The existing arrangements whereby solid wastes are disposed of either locally or on a proprietary basis by burying in dumps or landfills or by burning in incinerators and then landfilling the residue, have failed to dispose of wastes without excessive adverse environmental impact or the loss of potentially valuable resources. These problems and processes have thus become a major focus of governmental effort to reduce pollution and improve the State's physical environment -- air, water and land. The urgency toward "a better way" has been primary in the State's requirement for statewide solid waste management planning with the accent on resources recovery; the environmental concern has militated for a more intensified enforcement effort aimed at curbing pollution and fostering better management and disposal of wastes. These requirements have caused important problems in program development, goal-setting, staff utilization and coordination.

As occurred in the Federal Government and many other States, where increased environmental concern has fostered new or revised organizational forms in government administrative agencies, Connecticut established a new major department for the environment -- the Department of Environmental Protection -- in 1971. A Solid Waste Management Unit was set up within the Environmental Quality Division of that Department. The problems and difficulties involved in establishing a required new program emphasis on solid waste management in a situation characterized by the formation of a new department with many new programs, new organizational forms and units, and new policies, processes and procedures, can be easily imagined.

The Department was faced with a statutory requirement for long-range comprehensive solid waste management planning. The infant, fragmented solid waste management program was, by virtue of its function, to have predominating program responsibilities in this planning area. Existing difficulties and problems in traditional program administrative areas were compounded by the strain and drain of this basic planning requirement -- with a completion deadline of July 1, 1973.

In addition to the bold new long-range planning requirement, there was implicit in the overall programming requirement a need for vastly improved activity in the area of standard-setting, regulation, enforcement, grants-in-aid, [illegible] and management. Not only was the need great for providing support to the long-range planning effort and the statewide resources recovery [illegible] program it forecast, but also, these more traditional programs are [illegible] as being in need of improvement and of having genuine validity on their own account. It was for the improvement of this administrative area that [illegible] application for Federal aid was made and for which a demonstration grant [illegible]

The problems described in oversimplified form above were not only considered as problems but as opportunities.

The difficulties inherent in mounting a new program in a new major agency were countered by such opportunities as could be seen in not having to make changes in established programs where a regulated clientele had a vested interest, and in not having to contend with an entrenched bureaucracy having a stake in maintaining the status quo.

The need to respond rapidly to local emergencies and long standing problems of considerable urgency created pressures on staff and slender resources but, at the same time, created pressures for improved planning and program performance that augured well for reforms.

The long-range planning requirement, which created problems by causing a severe drawdown on available resources of staff time and talent, also acted importantly to set a major statewide goal. This goal-setting drew the individual goals of an otherwise fragmented program into harmony around a common objective, creating a program energy that was not there, before. Thus, a most important requirement the setting of a common goal -- was accomplished.

The problems of program startup have been mentioned, above. The Department of Health had produced a major issuance in the 1971 Solid Waste Management Plan, but this was designed for Health Department administration. The new program's resources were fragmented and too weak to work the plan. A professional staff, pulled together from several different programs, struggled to develop purpose and leadership. The program's policy base was not clearly defined; regulations were inconclusive or incomplete, from the environmental standpoint. Strongest among the basic program elements were the outside requirements for water and air compliance. Technical assistance covered such matters as giving advice to local recycling efforts. Land-use policies and criteria governing the grant-in-aid program were in the process of being shaped. In effect, each program element had its own goals and objectives; there was too little cohesiveness of purpose.

However, there was the requirement in Public Act 845, 1971, for the development of a long-range, statewide solid waste management plan. When the Department took action to develop such a plan through the issuance of a request-for-proposal seeking the assistance of private-sector capability, the seriousness of the Department's intent to do something about solid waste management on a statewide basis began to take effect. The individual and inconclusive goals and objectives of the various operating elements of the solid waste program began to be pulled in the direction of the long-range planning effort. Administrative efforts began to be attuned more closely to then current ideas as to how the long-range plan was expected to develop.

The goal of statewide systems design to effect resources recovery, which was the central objective of the long-range planning effort as early as August of 1972, began to shape the Department's administrative program.

That goal was:

> To achieve statewide solid waste disposal with maximum resource recovery at the lowest equitable cost, considering the need to minimize environmental debit and avoid imprudent land use, and the desirability of

maximizing economic benefits and utilizing private sector management, manufacturing and marketing capability, without appreciable disbenefit from any loss or erosion of political or governmental status.

Land Disposal of Solid Waste

New solid waste disposal areas are issued permits upon beginning operations. The State recognizes leachate as being a natural by-product of breakdown processes associated with municipal wastes. Therefore, the most critical aspect of new solid waste disposal areas is its location within the natural resource system. The State attempts to insure that leachate production is minimized resulting in a positive ecological impact on the environment. This is accomplished by:

1) Regulation of textural quality of cover material used in solid waste disposal areas, and regulated volumes for sufficient cover.

2) Promotion, through State and local regulations, of good drainage facilities for finished landfills where leachate may be incorporated into subsurface groundwater systems.

3) Finally, we propose a stabilization of graded areas with a good vegetative cover. This, of course, allows for runoff and evapotranspiration instead of percolation into groundwaters.

There are over eighty municipal sewage treatment plants in the State of Connecticut. Using a variety of methods of disposal, the State copes with the problems of residue disposal. Sludge materials have been successfully utilized along with sandy material as a final cover on many large solid waste disposal areas throughout Connecticut.

Manure from animal feed lots is a resource and not a solid waste and is therefore used as a fertilizer. Septic tank pumpings produce sludge material that normally, in Connecticut, is dewatered due to large particles with a variety of properties.

Currently in the State, there exist 144 private and municipal solid waste disposal areas in use. Moderate to severe leachate problems exist in approximately 70 of these facilities and 12 of the total number have monitoring wells. None of the facilities are equipped with leachate collection and treatment facilities.

Guidelines that will require permitting for all solid waste disposal areas in the future have been proposed but have yet to be implemented. Some of the facilities for solid waste disposal are permitted at present and some are not. This State has no approved sites for hazardous ot toxic waste disposal.

The capacity of the 144 facilities in Connecticut is variable. Approximately 50 solid waste disposal facilities have a capacity between 150,000 and 500,000 tons. About 20 facilities have a capacity of more than 500,000 tons and 75 facilities with less than 150,000 ton capacity.

The over-riding truth when considering landfill as a means of solid waste disposal is that all landfills, regardless of construction and operation techniques, will discharge some polluted water (leachate). This will continue to discharge until the decay process is complete. The production of leachate is a natural by-product of solid waste dcoomposition and is therefore part of any operation.

Given these facts and recognizing that disposal areas are absolutely necessary, the Department of Environmental Protection is in business of approving disposal areas that have controlled discharges. The basic overall philosophy is to minimize the quantity of leachate discharged and to maximize the natural treatment and dilution of that leachate. Therefore, the location of a disposal area in relation to existing and potential groundwater and surface water uses is critical. The hydrological setting of land in Connecticut varies greatly from place to place. Specifically in relation to solid waste disposal, the ideal setting for land disposal would be in a thick (greater than 15 feet) unsaturated and free draining soil section with a simple unconfined groundwater system discharging directly to an adjacent or nearby surface water body. This surface water body, in addition, should be relatively large and free flush. The setting where these characteristics can be found together are most concentrated in the large central Connecticut valley, near many of Connecticut's major rivers, and near Long Island Sound. This leaves large portions of Connecticut, primarily the northeast and northwest thirds, with few or no settings suitable for solid waste disposal. It is not that Connecticut doesn't have enough suitable sites, it is that their distribution is not equal. Therefore, to dispose of solid waste in the most environmentally sound manner, one must establish sites in a suitable geologic setting that can service entire regions that may not have a suitable setting. This argument in conjunction with the economic arguments for regionalization, are the prime reason that the Connecticut solid waste program has taken such a strong regional stand.

Enforcement Procedures

The initial step in the State Solid Waste Enforcement program is the issuance of a notice of violation. Notice of violation includes a specification of the statutory or regulatory violation observed and a time period within which to correct the violation.

If a violation is not corrected then further enforcement procedures may be instituted. Such further enforcement procedures are tied to the Connecticut Administrative Procedure Act. This provides for the issuance of orders by the Commissioner with right for administrative appeal. Administrative appeals taken from orders are adversarial public hearings. Following a proposed decision by a Hearing Examiner and a final decision by the Commissioner, there is also provided opportunity for judicial review. This judicial review is to be based upon the standard type of review courts have over administrative agencies (i.e., the court is not to substitute its judgement for the agency's).

In cases where the Commissioner's order is not complied with and an administrative appeal has not been sought, referrals are made to the Attorney General who then seeks enforcement of the order through court proceedings.

One should note that the Commissioner is empowered to assess civil penalties for violation of the statutes he enforces.

The civil penalty statute is Public Act 73-665 and is now being implemented for the Air Compliance Unit. Implementation of a civil penalty program for violation of solid waste statutes and regulations will await successful operation of the Air Compliance civil penalty program.

In the past twelve months, 39 orders have been issued by the Commissioner; seven of these have been appealed. These appealed cases are now in various stages of the hearing process; seven referrals have been made to the Attorney General.

In most cases, notices of violation alone are sufficient to obtain compliance with Department standards.

Although the Commissioner is empowered by statute to order municipalities into compliance, in most instances, the Department has attempted to avoid putting the State and local governments in an immediate adversary position. Rather than issue an order immediately, the Department, after inspection, informs municipalities of deficiencies and then seeks to work out a Consent Agreement which both the State and the municipality can live with. These Agreements note the deficiencies or violations noted and setforth a mutually agreed upon schedule for correcting the situation. The Department has met with fairly good success in this approach. This process actually accomplished two things. First it alerted municipalities to deficiencies in their solid waste management techniques Secondly, it opened needed channels of communication between the Department and various municipalities.

In cases where Consent Agreements could not be negotiated, the Department did issue Orders. It should be noted, however, that the city or town involved was already well aware of its problems before it received an Order.

Source Reduction and Resource Recovery

The State of Connecticut's current legislation incorporates Public Act 845 which establishes a statewide program for solid waste management through local and state governments and the Department of Environmental Protection. Along with Public Act 845, #72-646 has been enacted creating the Connecticut Resources Recovery Authority. The CRRA, which is in operation, is implementing the regional resources recovery programs and policies, as outlined in the Connecticut State Solid Waste Management Plan.

Under Public Act 845, the State has made available 14.2 million dollars for funding to municipalities in need of solid waste disposal area aid. This funding allows for purchases of equipment, buildings and engineering studies. More specifically, Public Act 845 is broken down into four major funding sections; the first of which allows for 100% funding for demonstration resources recovery systems or improved solid waste facilities including planning, design and construction of an improved solid waste facility. Secondly, a section on plan preparation is incorporated into 845 allowing for 10% funding per town with a maximum of 70% allowed. A third section allows for funding toward purchases of equipment or construction of buildings in conjunction with a sanitary landfill. Under this section 25% for the first town with 10% for each additional town is available up to 65% maximum for the total grant. An extra 5% is allotted for handling of bulky waste. A fourth section of Public Act 845 grants money to municipalities or regional authorities which, after July 1, 1969, rebuilds, reconstructs or constructs a volume reduction plant. The first town is allotted 25% with 10% additional funding per extra town with a maximum of 65% allowed.

At present, there are no tax laws or purchasing policies that are beneficial to resource recovery efforts. Surveys have been made concerning source reduction and energy recovery, but a program has yet to be established by State or local governments. The proposed legislative action concerning resource reduction has been defeated at present.

Hazardous Waste Management

Connecticut is a highly industrialized state which has about 6000 industrial plants. It has been estimated that approximately 330,000 tons of liquid and semi-liquid industrial wastes are generated in Connecticut each year. These wastes are a complex array of substances ranging in form from pure liquid to thick, oily metal bearing sludges. Included amongst these wastes are hazardous and toxic materials which, if not properly handled, could result in serious injury to people and contamination of our natural resources. There are also solid industrial wastes which could have these same results. The following are a few examples which can be cited:

In one case, magnesium powder had been deposited by one industry and the bulldozer operator was not warned about its flammable characteristics. The operator proceeded to spread the materials, as required, prior to covering. Sufficient heat was generated during this operation to ignite the powder and flames enveloped the bulldozer. Fortunately, the operator escaped with minor injuries because he was in a partially closed cab and the flames died down fairly quickly.

In another case, deposit of flyash from a power plant formed leachate which contaminated a swimming area in a summer camp in Waterford.

In Southington, Connecticut, an industry contaminated ground waters and its own wells by depositing into the ground wastes remaining from a solvent recovery process. This method of disposal also caused an air pollution problem in the area as a result of evaporation of the solvents in the residue sludges.

In addition to chemical wastes, the liquid wastes generated, contain about 19,000,000 gallons of oil. Although it has been estimated that about 65% of this oil is collected, cleaned and reused for burning or road oil, only 15% is sent to a re-refiner and about 20% is dumped in sewers, at solid waste disposal areas or in the ground. Our major problems are related to this latter figure (20%). These estimates were made as a result of discussions with manufacturing companies as well as waste oil collectors and reprocessors. The bulk of this oil is generated in the following areas: Hartford, Bridgeport, Waterbury, New Haven, New Britain and Middletown.

Beryllium is a toxic waste produced by some Connecticut industries. It requires special treatment to properly dispose of it. Although radiological wastes are produced in Connecticut, their disposal is carefully monitored and does not appear to be a problem in Connecticut. Very little information is presently available in the files of the Department of Environmental Protection on the number, size and location of private areas used for disposal of hazardous wastes. Information is also needed on the precautions that must be taken to dispose of these wastes and the potential for reclaiming or recycling them.

Since staff in the Department's Water Compliance unit have done work with the transport and disposal of industrial wastes, the Solid Waste unit has developed with them a detailed approach to obtaining reliable information on the types, quantities, present methods of disposal, location of disposal areas and sources of generation of carefully selected hazardous wastes. When these wastes have been properly inventoried, regulations will be drafted and recommended for adoption by the Department. They will give the Department the authority needed for properly controlling the transportation, processing and disposal of industrial wastes. Emphasis has been placed on reclaiming as much as possible and minimizing the quantity to be wasted.

When it is found that methods of disposal are being used which may be dangerous to employees or to the public or may result in degradation of the quality of our natural resources, the Department takes whatever steps are necessary to have disposal methods converted to safe and sanitary methods that will minimize environmental degradation.

Under certain circumstances, if hazardous wastes are handled properly, the Department of Environmental Protection will give permits for land disposal of such wastes. At present, there are limited regulations governing the generation of hazardous wastes with the exception of radio-active materials which are governed by federal agencies. Metallic oxides and hydrous metallic oxides have heavy restrictions placed upon them concerning land disposal. General Electric in conjunction with the Department of Environmental Protection has conducted a survey concerning hazardous waste volumes. Liquid waste haulers are required to register quantities and qualities quarterly with Hazardous Wastes and Water Compliance units of DEP.

Public Affairs

The Solid Waste Management Unit of the Department of Environmental Protection has various sources of from which technical assistance to the public is available. An extensive library on solid waste information is available through DEP for interested groups.

The State feels that by proper permitting and regulating, it can reduce the problems associated with solid wastes. Technical experts and then inputs are utilized to the fullest extent possible in determining whether or not a solid waste disposal site is meeting the needs of the State properly. The judicious use of monies, both state and local, aids in the generation of total efficiency in solid waste management. The continued formation of regional refuse plans, the appropriation of grant funds to municipalities, and an applied program of hazardous and industrial wastes management all combine to reduce the problems of solid waste management in the State of Connecticut.

State of Delaware

Solid Waste Management

A. AGENCY

The exclusive authority for solid waste management in the State is vested in the Department of Natural Resources and Environmental Control under the guidance of the Honorable John C. Bryson, Secretary. Within the Department of Natural Resources and Environmental Control are several divisions each of which has its unique responsibilities. The Division of Environmental Control, under the direction of Mr. N. C. Vasuki, is charged with the responsibility of regulating all solid waste management activities in the State. These activities include collection, storage, transportation, processing and disposal of all solid wastes. The Solid Waste Office, currently within the Air Resources Section, is responsible for performing the daily business of the agency and implementing and enforcing regulations. This office also serves as the single point contact with the U.S. Environmental Protection Agency, Office of Solid Waste Management Programs. Currently, this office is staffed by one senior level engineer, one junior level engineer and one secretary.

B. AUTHORITY

Title 7, Delaware Code, Chapter 60, provides the Secretary of the Department of Natural Resources and Environmental Control with the sole authority for solid waste management in the State. This law became effective on July 17, 1973 and requires that permits be issued for all activities relative to solid waste management in the State. Further, the Department has the authority to develop regulations which are necessary to implement the provisions of the law. The Secretary also has the authority under this law to develop and implement a state-wide solid waste management plan after the Governor's adoption.

C. REGULATIONS

In August, 1974 the Secretary of the Department of Natural Resources and Environmental Control adopted the "Delaware Solid Waste Disposal Regulation." This regulation replaced the former solid waste disposal regulation, entitled State Sanitary Code, Part 38. The newly adopted regulation includes major requirements for sanitary and industrial landfills such as:

(1) A leachate collection, treatment and disposal system,
(2) The incorporation of impermeable membranes in the design of leachate collection systems and landfill sites,
(3) Methods of venting decomposition gases and
(4) Monitoring of groundwater quality and decomposition gases.

These changes are consistent with the final federal guidelines promulgated in the Federal Register, Wednesday, August 14, 1974, Volume 39, Number 158, Part III. New state regulations governing the storage, collection and transportation of solid wastes are currently being developed.

D. LAND DISPOSAL OF SOLID WASTE

The primary method of solid waste disposal utilized in the state is the landfill. In accordance with the "Delaware Solid Waste Disposal Regulation," the landfills in Delaware will be upgraded to the status of sanitary landfills. However, they will also be required to install leachate collection and treatment controls to prevent long-term water pollution problems. For example, in New Castle County, the leachate from a terminated landfill (3 yrs.), Llangollen Landfill, has contaminated a major groundwater supply (aquifer). This landfill was operated by New Castle County, which projects expenditures in excess of $26 million in an attempt to rectify the aquifer. Also, landfills generate decomposition gases, such as methane, which are explosive and may be monitored and vented to eliminate underground fires in the landfills. Unfortunately, landfills waste our land resources and are not amenable to handling the growing quantities of industrial wastes and sludges resulting from air and water pollution control systems or the process industries.

EPA REQUESTED INFORMATION

a. The Delaware Solid Waste Disposal Regulation includes the following design criteria to minimize the potential for surface or subsurface water pollution:

(1) a leachate collection, treatment and disposal system
(2) impermeable liners for disposal areas and leachate collection systems
(3) monitoring wells to detect changes in groundwater quality

b. The state is investigating methods of recycling sewage sludge through efforts such as the state recycling project, known as the Delaware Reclamation Project, (DRP). Also, the state is currently cooperating with the U.S. Army Corps of Engineers and the City of Wilmington, Delaware in a project to recycle digested sewage sludge by land application. The objective of the project is to utilize the fertilizer value and soil conditioning properties of the sewage sludge to reclaim dredge spoils.

c. Total number of solid waste land disposal facilities now in use: 39
number where leachate is a known problem: 3
number with monitoring wells: 9
number with leachate collection and treatment facilities: 1 (under construction)
number of such facilities at which leachate has been produced: 1

d. Number of land disposal sites with State permit/license/approval: 39
estimated percent of State population served by approved sites: 85
number of State approved sites for hazardous/toxic waste disposal: 0

e. Number of sites with ultimate capacity of: (Use density of 1000 lbs/cu yd)
less than 150,000 tons: unknown
between 150,000 and 500,000 tons: unknown

More than 500,000 tons: at least 2

f. Solid Waste management is considered in State land use planning; 7 Del. Code, 60 requires all permit applicants to submit documentation that the appropriate zoning or planning commission approved the land use for landfill purposes.

E. ENFORCEMENT

Delaware's Environmental Protection Act, 7 Del. C. 60, provides civil and criminal penalties for violations of the Act, promulgated regulations or permit conditions. The Secretary may seek a preliminary or permanent injunction or temporary restraining order in the Court of Chancery, if the violation has been completed and there is a substantial likelihood that it will reoccur. The Secretary may also issue a cease and desist order to any person violating any rule, regulation, order, permit condition or provision of the Act. The Secretary issued the Department's first cease and desist order in February, 1974 to stop the disposal of solid waste in an industrial landfill, which was burning uncontrolled. The Department extinguished the surface landfill fire over a two day period of continuous effort. The cease and desist order was lifted after the landfill owner submitted plans of operation to preclude such future incidents, agreed to reimburse the Department for all reasonable costs it incurred in extinguishing the fire and the subsurface fire was completely extinguished (about 2 week period).

Within the Division of Environmental Control is an enforcement group consisting of six (6) Environmental Protection Officers (EPO). The EPO is responsible for investigating complaints concerning air and water pollution or improper solid waste disposal. The EPO also performs routine inspections of facilities having permits to determine whether the facility is operating in violation of the permit conditions. In all cases, the EPO has the authority to enter a premises for purposes of conducting an investigation to determine whether the provisions of any air, water or solid waste regulation are being compromised. Also, he assists the solid waste engineer and legal counsel in the preparation of court cases which may result from violations detected during field investigations.

F. SOURCE REDUCTION AND RESOURCE RECOVERY

The State of Delaware recognizes the need for future alternatives to solid waste disposal. Delaware strongly believes in the concept of reclamation and recycling. In October, 1972 the U.S. Environmental Protection Agency, Office of Solid Waste Management Programs awarded a $9 million grant to the State of Delaware to be used for the completion of the Delaware Reclamation Project (DRP). Delaware applied for this grant and it was the largest of a total of four which were awarded on the basis of extremely keen national competition.

The objective of the Delaware Reclamation Project is to demonstrate the total reclamation concept, and the associated economics. The scope includes design, construction, operation and product sales. Delaware will attempt to demonstrate that recycling can be done on a commercial scale. Sufficient quantities of reclaimed products will be generated which will allow a true assessment of the markets for these materials. The products will include humus (compost), solid fuel, fuel gas, ferrous and non-ferrous metals, glass, paper and carbon. Also, EPA has required the state to demonstrate the use of shredded air classified solid waste (solid fuel) as a supplemental fuel for steam-electric oil fired utility boilers.

The initial plant capacity will be 500 tons/day of unsegregated mixed refuse with 230 tons/day of 8% solids digested sewage sludge. The long range design capacity of the plant is a nominal 1000 tons/day of mixed refuse and up to 460 tons/day of sewage sludge. A unique feature of the Delaware Reclamation Project is the process capability to simultaneously dispose and reclaim as marketable products refuse and sewage sludge. In October, 1972, the President signed into law the Marine Protection, Research, and Sanctuaries Act (P.L. 92-532), which places restrictions on the dumping of solid wastes into the ocean. Therefore, Delaware will offer a viable, land based sewage sludge disposal system as an alternative to ocean dumping. Hopefully, the DRP will be the first of other innovative systems for recycling our growing wastes.

EPA REQUESTED INFORMATION

a. Delaware has no regional resource recovery authorities. Presently the state is pursuing solid waste resource recovery in its effort to complete the Delaware Reclamation Project.

b. The Delaware Department of Community Affairs and Economic Development has the authority to issue industrial bonds to local government and/or private industry for solid waste management systems including resource recovery.

c. Resource Recovery planning is primarily being conducted at the state level.

d. Presently there are no state tax laws that would benefit resource recovery efforts. With respect to purchase policies, the state has investigated the use of recycled paper in state offices. Also, the state is presently participating in an effort to recycle paper wastes generated during the daily operations of the state offices.

e. There are no state or local government programs regarding source reduction of solid wastes. However, there has been legilsation drafted regarding non-returnable beverage containers.

G. HAZARDOUS WASTE MANAGEMENT

a. The Delaware Solid Waste Disposal Regulation has provisions for dealing with hazardous, toxic, industrial or chemical wastes. However, Delaware does not have any landfills for disposing of hazardous wastes. Hazardous wastes are dealt with on an individual basis and generally are chemically/physically processed in a licensed facility out of state.

b. Presently, the state has no reliable estimates of the quantities of such wastes generated in the state. However, the state will attempt to generate this date, hopefully, under a Hazardous Waste Management Planning Grant from EPA.

Shortly, the state will submit an application for this grant to the EPA.

H. PUBLIC AFFAIRS

The state is keenly aware of the need to interact with the public. In the development of the Solid Waste Disposal Regulation, the Department of Natural Resources and Environmental Control held a series of workshops with representatives of civic groups, consulting engineering firms, local government, industry and landfill operators. These workshops were used to review drafts of the proposed regulation for comments and ultimately the state generated a regulation which included considerable input from the public. With respect to technical information, the state continuously disseminates information, such as EPA's "Operation Responsible," on solid waste management activities. The Department of Natural Resources and Environmental Control maintains a telephone "Hot Line" which the public can dial each day for news of the most recent developments, such as enforcement activities and the adoption of new regulations. The Solid Waste Office has also cooperated with the EPA Region III Office and held a training course for sanitary landfill operators earlier in the year.

I. CRITICAL AREA FOR FEDERAL ASSISTANCE

Critical areas in solid waste management which require federal assistance include:

(1) Demonstration grants to assist the states in the design, construction and operation of comprehensive hazardous solid waste disposal facilities which include a combination of chemical/physical processing systems complemented by landfill with resource recovery potential.

(2) Demonstration or research grants to assist the states in projects to characterize leachate generation and develop models for prediction including gas kinetics, complemented by leachate rectification systems.

(3) Grant funds to assist states in developing and implementing statewide solid waste resource recovery programs.

STATE OF FLORIDA

SOLID WASTE PROGRAM

A. LAND DISPOSAL OF SOLID WASTE

Describe State legislation, policy and program pertaining to:

a. Design criteria and State Review procedures utilized to minimize the possibility of underground and surface water pollution from new sanitary land fills.

A soils study and a hydrological report are prerequisites to permitting a new site as are the standard criteria listed in the solid waste rule.

b. Processing and disposal of sludge from municipal wastewater treatment plants, animal feedlot waste, and septic tank pumpings, including the utilization thereof.

Sewage sludge after partial dewatering is disposed of by land spreading as a general method. The few sludge incinerators in the state are not operating because of high cost.

Animal feedlot waste, depending on the size of the operation is either land spread or treated in anaerobic lagoons.

Septic tank pumpings, where facilities have been provided are disposed of in sewage treatment plants. The majority however is disposed of in sanitary land fills.

Experiments are being conducted utilizing a series of shallow trenches tapering to grade, dumping in the deepend, allowing the waste to settle for 24 hours and then covering. At sites handling a large number of tank trucks per day mixing the waste at the face of the fill, as some advocate, has not proven satisfactory.

c. Total number of solid waste land disposal facilities now in use: 498

Number where leachate is a known problem:________

Number with monitoring wells:________

Number with leachate collection and treatment facilities:________

Number of such facilities at which leachate has been produced:________

Staff time has not been available to assemble this data although it is included in the land disposal site data forms.

d. Number of land disposal sites with State permit. 135

Estimated percent of state population served by approved sites. 31 %

Number of State approved sites for hazardous/ toxic waste disposal. 0

e. Number of sites with ultimate capacity of less than 150,000 tons. 300 (Estimated)

Between 150,000 and 500,000 tons. 180

More than 500,000 tons. 20

f. Is solid waste management a significant factor in State land use planning?

Yes - the State division of Planning's Bureau of Land Planning has frequently conferred with us in their land use planning activities.

B. ENFORCEMENT PROCEDURES

Briefly describe your State's enforcement procedures including administrative and judicial remedies available and enforcement actions taken during the past 12 months.

There is an enforcement coordinator in each of our six regions plus a headquarters staff of engineers and attorneys. Violations noted by field inspections or complaints from the public are initially handled by the Regional enforcement personnel. Depending on the severity of the violation, a letter of warning or letter of notice may be issued. If results are not thus obtained or violations persist, then a pre-enforcement case summary is prepared and an administrative notice and order for corrective action is served. If this action does not result in compliance then civil proceedings are undertaken and penalties sought which could result in fines of up to $10,000 per day per violation.

Number of Letters of Notices. 67

Number of Warning Notices. 19

Number of Pre-enforcement Summary. 21

Number of Notices and orders. 6

Number of cases settled without court action i.e., satisfactory compliance schedule. 8

Number of Suits filed. 3

Number of Suits settled. 3

C. SOURCE REDUCTION AND RESOURCE RECOVERY

What is the current State legislation, policy, and program affecting resource recovery:

a. Are regional solid waste management or resource recovery recovery authorities allowed and how many have been created?

Such authorities can be formed by passage of so called local bills. Three counties have created such authorities. Note: the passage of the Florida Resource Recovery and Management Act as of July 1, 1974 will accelerate this activity.

b. What type of State funding is available for local government and/or private industry involved in resource recovery?

None.

c. Is resource recovery planning being conducted at the State or local level?

State.

d. Are there any State tax laws or purchasing policies that may be beneficial to resource recovery efforts?

Yes - the aforementioned Act provides that the State Public Service Commissioners shall establish rates for all railroads and common carriers that do not discriminate against the transport of solid waste, recovered resources or recycled materials and whenever practicable provide an incentive for resource recovery and recycling. It further provides that reduced rates may be granted for such materials.

e. Has the State or any local government initiated any program in source reduction (e.g. beverage container or packaging) or energy recovery?

Dade County has a pending referendum for the approval of a deposit on all beverage containers.

Are there any pending or proposed legislative actions, studies or programs in resource recovery or source reduction?

Yes - Dade County is awaiting bids of RFP's for a turn key resource recovery solid waste facility.

The city of Tallahassee has had a feasibility study made to heat and cool the State Capitol buildings, Florida State and Florida A & M Universities similar to the Nashville project.

Several plans are in the making for resource recovery tape systems.

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D. HAZARDOUS WASTE MANAGEMENT

a. Describe the existing State legislation, policy, program and agency (ies) involved in the control of the generation, transport, processing and/or land disposal of hazardous, toxic, industrial and/or chemical waste.

No actual legislation, but the Department's rule stipulates that such wastes shall, at the owners expense, be rendered safe and sanitary prior to delivery to the disposal facility. Specific problems are handled on a case by case basis. A recent staff addition is being groomed to become a hazardous waste specialist.

The State Department of Agriculture controls the types of pesticides, herbicides and fungicides that can be used in the State. The Division of Health licenses all pesticide applicators.

b. Have any surveys been conducted or estimates of such waste quantities been made?

The University of Florida has recently conducted a survey on nonindustrial toxic and hazardous wastes under an EPA grant. Reports are not yet available.

Surveys will be conducted as staff time permits.

E. PUBLIC AFFAIRS

Describe your program in public affairs, technical information activities, and the public and private interest groups in the State that you interact with.

The solid waste planning staff has established rapport with politically oriented organizations such as Florida League of Cities, State Association of County Commissioners, APWA and others to the end that solid waste subjects are included in their convention programs.

The solid waste planning staff has established a SWIRS Jr. to provide technical information to field staff and local communities. In addition a film library is in active use by field staff and local groups.

F. CRITICAL AREAS FOR FEDERAL ASSISTANCE

Briefly describe those areas where the Office of Solid Waste Management Programs could (this line was cut off - but it is assumed to be - could "more effectively support State Solid Waste efforts.")

1. In the hazardous waste area it would be helpful if the construction of the National disposal site, scheduled for Alachua County, Florida, would be expedited. This would obviate the necessity for shipping such materials out of the State for disposal until the State could develop regional sites.

2. Also in the hazardous waste area, EPA should develop a design and provide funding for the establishment of regional hazardous waste disposal sites within the State.

3. Low per capita income counties and cities particularly in rural areas need Federal assistance to plan for and implement solid waste management systems.

4. There is a need for concise reference books on collection, disposal and resource recovery similar to the two books published by APWA instead of a proliferation of booklets and bulletins now being supplied by EPA. In fact a joint venture to that end between EPA and APWA might be desirable.

5. The disposal of sewage sludge, septic tank pumpings, and water treatment plant sludge is presently a controversial subject. The development of proven methods and guidelines would be welcomed by most States.

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STATE OF IDAHO
Cecil D. Andrus, governor
department of health and welfare
STATEHOUSE, BOISE, 83720
James A. Bax, director

October 30, 1974

STATE OF IDAHO
SOLID WASTE MANAGEMENT

INTRODUCTION

The responsibility for developing, maintaining, and operating solid waste management systems is delegated by Idaho Code to the respective Boards of County Commissioners in each of Idaho's 44 counties. It has been the policy of the Environmental Services Division of the Idaho Department of Health and Welfare (H&W) to assist these counties in developing and implementing feasible systems.

A preliminary plan is actually developed by H&W in cooperation with local district health departments and other agencies. The Board of County Commissioners then chooses the alternative plan they feel best fulfills their needs and the system is implemented.

A. LAND DISPOSAL OF SOLID WASTE

1. Preventing ground and surface water contamination from land disposal sites is one of the primary objectives of the state solid waste management program. Therefore, prior to approving any new sanitary landfill, the area is personally inspected by a state H&W solid waste representative in order to determine surface water drainage characteristics. Following this, the excavation or drilling of test holes or wells is required to determine subsurface soil types and characteristics. An estimate of depth to water table is then required utilizing data from nearby wells and/or U.S. Geological Survey data. If the site is considered marginal, a test well is required to accurately determine the depth to water table.

2. Methods other than sanitary landfilling are usually recommended wherever possible for disposal of sludge from municipal wastewater plants, animal feedlot waste and septic tank pumpings. However, if spreading on land for fertilizer or other useful purpose is not feasible, deposition of these materials in solid waste disposal sites is recommended in order to prevent excessive environmental degradation by deposition in unapproved areas and waterways.

3. Total number of land disposal sites now in use 190
Number where leachate is a known problem 20
Number with monitoring wells 2
Number with leachate collection and treatment 1
Number where leachate has been produced 1

4. Number of land disposal sites with state approval 50
   Estimated percent of state population served by approval sites 85%
   Number of state approved sites for hazardous/toxic waste disposal 1

5. Number of sites with ultimate capacity of
   Less than 150,000 tons 47
   Between 150,000 and 500,000 tons 3
   More than 500,000 tons 0

6. Solid waste is a significant factor in state land use planning.

B. ENFORCEMENT PROCEDURES

Violation of the State Environmental Regulations can result in either civil penalties up to $1000 or criminal misdemeanor penalties up to $300 per offense. No legal action has been initiated in the past 12 months. In three instances legal action has been threatened unless compliance with the Idaho Solid Waste Management Regulations and Standards was realized.

C. SOURCE REDUCTION AND RESOURCE RECOVERY

At the present time there are no state laws supporting or requiring source reduction. As stated previously, the counties are responsible for establishing, maintaining and operating solid waste management systems including resource recovery systems. However, due to adverse economics and a lack of secondary material markets within the state, recycling is not a viable alternative in Idaho at the present time. There are local voluntary recycling centers in the large cities. However, for the most part, these are not supported by municipal, county, or state funds.

An Interim Legislative Committee is currently investigating the solid waste problem in Idaho including resource recovery. The committee will make a recommendation to the Idaho legislature convening in January, 1975.

D. HAZARDOUS WASTE MANAGEMENT

The State Department of Transportation in conjunction with its Federal counterpart regulate transportation of hazardous materials.

The State Department of Agriculture regulates the application of pesticides on farm land. This constitutes the largest quantity of hazardous material in Idaho.

The Department of Health and Welfare, Environmental Services Division controls the disposal of hazardous materials by the Conditional Use Permit (CUP) provisions of the Idaho Solid Waste Management Regulations and Standards. One state approved site is currently operated under the terms of a CUP for disposal of pesticides and pesticide containers. Disposal of other types of materials requires approval from the Department of Health and Welfare, Environmental Services Division.

The Idaho Industrial Solid Waste Survey Report included a short section of hazardous wastes reported by those industries surveyed. No reliable volumes were available, only types of materials.

E. PUBLIC AFFAIRS

One person is assigned the responsibility of public education for all of the environmental programs for the Environmental Services Division. Technical articles are formulated and routed through the public relations personnel. The Department interacts with local governments quite extensively due to the nature of the Idaho law.

F. CRITICAL AREAS FOR FEDERAL ASSISTANCE

Comprehensive source reduction, reuse and recycling, in this preferential order, obviously offer the only long-range solutions to the solid waste problem. These programs are absolutely necessary if we are to conserve our natural resources in the form of energy and materials. However, due to the manufacturing and marketing characteristics inherent to the United States, it is not logical for 50 states to develop legislation to promote these programs. Many companies manufacture in one plant at one location and market to the entire nation. The industries cannot be expected to meet the requirements of 50 different statutes. Therefore, this type of legislation should be developed at the national level. The states definitely need Federal assistance for the passage of national laws.

Indiana Solid Waste Management Report

A. Land Disposal of Solid Waste

1. All refuse processing and disposal facilities (including sanitary landfills) must be approved by the Stream Pollution Control Board and Indiana State Board of Health. Permits are issued for construction and operation of sanitary landfill sites. SPC-18, Solid Waste Managment Permit Regulation outlines specific design criteria which includes:

    a. Maps showing surface water courses, drainage tiles, gas and oil wells.

    b. Geological cross-sectional drawings of the legal section or sections from the plat book within which the proposed landfill site is located, showing types of materials from the ground surface down to and including bedrock, depth to water table and present and final topographies: one north-south and one east-west drawing must be submitted.

    c. Reports of soils, ground water and geology, including the following:

        1. Soil borings, number to be determined through consultation with Solid Waste Management Section; taken to a depth of at least 20 feet below the lowest level of proposed excavation or refuse filling operation or to bedrock, whichever is shallower.

        2. Logs of borings are to include particle size distribution for entire boring indicating zones of saturation and measured water level immediately after boring is made and after 24 hours.

        3. Samples from the borings are to be tested for permeability, compactability and ion exchange properties of the subsurface materials for those strata which are essential to the design of the landfill.

        4. Boring information for all wells located within ¼ mile of the proposed site which have been recorded with the Department of Natural Resources.

        5. A soils map and related descriptive data as published by the Soil Conservation Service.

    d. Where specified, ground water monitoring wells shall be established around the perimeter of the landfill site.

2. Septic tank pumpings are generally directed to municipal sewage treatment facilities. In some cases it may be spread on farm land and disced under. Sludge from municipal wastewater plants is spread on farmland except during periods of inclement weather when it may go to a sanitary landfill site temporarily. Requests for disposal of liquid, semi-liquid and hazardous wastes at sanitary landfill sites

are reviewed on a case-by-case basis. The disposal of animal feedlot waste is on farmland.

3. a. Total number of solid waste land disposal facilities now in use 181

   b. Number where leachate is known problem 45

   c. Number with monitoring wells 15

   d. Number with leachate collection and treatment 6

   e. Number of such facilities at which leachate has been produced 181

4. a. Number of land disposal sites with state permit 164

   b. Percent of state population served by approved site 83

   c. Number of state approved sites for hazardous/toxic waste disposal 12[1]

[1] liquid, semi-liquid and hazardous wastes are approved on a case-by-case basis. There are no sites approved exclusively for hazardous or toxic waste disposal.

5. a. Number of sites with ultimate capacity of:

   less than 150,000 tons 61
   between 150,000 and 500,000 tons 100
   more than 500,000 tons 20

6. Solid waste management is not as yet a significant factor in state land use planning. The emphasis and publicity placed on solid waste disposal facilities is quickly however, arousing the public ire and demands for more adequate local planning and control procedures.

B. Enforcement Procedures

There are several enforcement modes available and becoming available under SPC - 18, Refuse Disposal Act, and Environmental Management Act.

a. Mandatory relief through the Attorney General's Office in any court of competent jurisdiction.

b. Administrative hearing before Stream Pollution Control Board, violation of Board order in any court of competent jurisdiction through Attorney General.

c. Administrative hearing before the Environmental Management Board, violation of Board order in any court of competent jurisdiction through Attorney General. Civil penalties provided by Environmental Management Act.

d. Mandatory relief through local prosecutor and health department in court of competent jurisdiction.

During the past year two cases were referred to the Attorney General's Office for action.

C. Source Reduction and Resource Recovery

1. Regional solid waste management or resource recovery authorities are allowed by several Indiana statutes. To date none have been created.
2. There is no state funding available for local government and/or private industry involved in resource recovery.
3. Resource recovery planning is being conducted at the state level and encouraged locally. There are several local planning efforts being conducted.
4. To date, there are no state laws or purchasing policies that may be beneficial to resource recovery efforts.
5. There are no state programs aimed at source reduction or energy recovery. SCA operates a plant in Fort Wayne, Indiana geared to "cubette" refuse for fuel use.

There is proposed a request from the Environmental Management Board to the legislature for funds to develop a state wide solid waste management plan to include resource recovery and regionalization.

A partial list of those organizations supporting a resource recovery/ regionalization effort are: Indiana Manufacturers Association, Indiana Farm Bureau Inc., U. S. Brewers Association, Indiana Division;Indiana Petroleum Council, Environmental Quality Control Inc., Indiana Retail Grocers Association, Izaak Walton League of America, Indiana Division: Indiana Conservation Council, League of Women Voters, Indiana Audubon Society, Indiana State Chamber of Commerce and various state and local governmental agencies.

D. Hazardous Waste Management

1. The Indiana State Board of Health and the Pesticide Review Board are presently involved with hazardous waste management.

SPC-18 the Solid Waste Permit Regulation administered by the Solid Waste Management Section controls final disposal of hazardous wastes. Hazardous wastes, for purposes of definition, includes liquid, semi-liquids, sludges less than 30% solids, pesticides and their containers, raw animal manure, septic tank pumpings, explosives, pathological and radioactive wastes and raw or digested sewage sludge.

Requests for disposal of hazardous wastes at land disposal sites are reviewed on a case by case basis and for a specific site. There are several sites in the state approved for disposal of hazardous wastes.

The Industrial Waste Section, Division of Water Pollution Control has proposed SPC-17, an Industrial Waste Haulers Permit regulation. This proposed regulation, which is presently under revision after public hearings, will control the transport and land disposal of hazardous or industrial wastes.

2. At present, an in-house survey is being conducted to estimate the industries involved and quantities of hazardous wastes produced and disposed of.

E. Public Affairs

At present there is no structured public affairs program or section. Public information programs are an on-going portion of the present solid waste management program. Each staff member meets periodically with county commissioners, county councils, health departments, mayors, town boards, environmental groups and planning agencies.

Operator training courses and one day seminars were presented during the past year.

F. Critical Areas for Federal Assistance

1. Provide greater assistance and incentives for regionalization of solid waste management activities.
2. Develop guidelines for regional solid waste planning.
3. Assist and provide guidance in the development of operator certification programs.
4. Provide construction of planning grant funds for regional solid waste management activities.
5. Provide more adequate technical information.
6. Provide hazardous waste management supportive activities.

11/8/74

State of Kansas

DEPARTMENT OF HEALTH & ENVIRONMENT

Topeka, Kansas

SOLID WASTE PROGRAM
November 1974

A. The State of Kansas required each county in the state to prepare and implement a comprehensive solid waste management plan, which addresses itself to all aspects of solid waste management. These plans were to have been completed by July 1, 1974, and of this date all except three have been reviewed and approved by the Department. The pattern of the county programs calls for county government to assume responsiblility for disposal operations. The manner in which this is accomplished varies from county operation of new facilities, operation of existing city facilities by the county or city, and privately owned and operated facilities.

State law requires that all land disposal sites in the state must have a permit from the Department not later than June 30, 1976.

The Department requires operators of all new sites opened in the state must have development and operational plans approved prior to beginning operation.

Kansas has prepared design and operational guidelines which all persons operating sanitary landfills must follow when applying for permits to operate sites. (Copies available on request.)

Kansas does not encourage the use of sanitary landfills for the disposal of municipal wastewater treatment sludges. We feel that the operational problems encountered are so disruptive as to make the community landfill almost unworkable. In most situations spreading of sludges and feedlot wastes on agricultural land is the practice most often followed. Some communities are proposing landfills exclusively for dewatered wastewater sludges.

At the present time, there are some 300 land disposal sites in use. At the conclusion of the permit program, this number is expected to be reduced to 125 to 140 sites (slightly more than one site per county). At the present time, there are no serious leachate problems at permitted sites. The known problems are occurring at sites that were not designed or those that were improperly covered and closed out. There are 33 sites with monitoring wells (wells are not required at all sites). The need for wells is determined by a geological evaluation of the site.

As of this date, 62 sites have been approved by the Department. Those sites serve about 70 percent of the state's population.

Solid waste disposal has not played a significant role in land use planning in our state.

over

B. The state's enforcement role in enforcement of solid waste management matters is outlined by statute. Departmental order - injunction and mandamus would be appropriate remedies to be used in solid waste management matters. No criminal penalties are involved except in the case of littering.

C. No formalized state policy regarding resource recovery has been instituted. All local plans were to consider resource recovery as a part of the local program. This has not proven to be a productive approach. At the present, no legislative proposals have been proposed which address themselves to resource recovery matters.

D. The Solid Waste Management Act is sufficiently strong to enable control of all wastes determined to be hazardous. At the present time, a study is underway to determine the amount of regulation necessary to deal with those problems identified.

Staff has been employed and should begin work by December 1, 1974.

E. The Solid Waste Management Act established solid waste planning in each county in the state. Membership consists of elected and appointed public officials and representatives of the public-at-large. This group serves as a forum for bringing together those interested in solid waste management. The Department has sponsored a series of seminars on solid waste collection safety and sanitary landfill design and practice.

F. It would seem to be most helpful if a series of actual case studies, with the solutions proposed, and the success of the methods employed, could be prepared and circulated. Much of the materials produced by the various studies is of academic interest but quite difficult to put into practice and certainly doesn't reach down to the levels of people with operating problems. Kansas is most grateful for the technical information available from the OSWMP. I think most would agree that the depth of involvement of OSWMP in state activities is "just about right." Any attempt to impose national solid waste standards would undoubtedly result in hindering rather than helping state programs. Federal financial support to states should be held to an absolute minimum required to support personnel on a matching basis.

jp

KENTUCKY

SOLID WASTE MANAGEMENT ACTIVITIES

INTRODUCTION:

The 1972 Extra Ordinary Session of the Kentucky General Assembly and pertinent Executive Orders pertaining to the Reorganization of State Government created the Kentucky Department for Natural Resources and Environmental Protection. This cabinet level department has two (2) bureaus - Land Resources and Environmental Quality, each bureau is headed by a commissioner. The Bureau of Environmental Quality is composed of five (5) divisions: Water Quality; Air Pollution; Solid Waste; Sanitary Engineering; and Plumbing. (See Departmental organization chart-Figure I)

The Division of Solid Waste has three (3) programs - Field; Training and Hazardous Waste; and Planning and Technical Assistance. Present staffing includes twenty (20) professional positions and seven (7) clerical positions (See Division organization chart-Figure II). The budget for FY 75 is $443,000 allocated among the three (3) programs in the following amounts: $273,751 Field Enforcement; $74,529 Training and Hazardous Waste; and $94,720 Planning and Technical Assistance. During FY 75 there are NO active Federal grants, however, the state agency is acting as a subgrantee for two (2) MDTA projects.

LAND DISPOSAL OF SOLID WASTE:

Kentucky Revised Statutes (KRS) Chapter 224 is the legislative authority setting forth the solid waste management intent to . . . "provide for the disposal of solid waste in a manner that will protect the public health and welfare, prevent the spread of disease and creation of nuisance, conserve our natural resources and enhance the beauty and quality of our environment."

In order to carry out the function stipulated in this legislative directive an administrative regulation has been promulgated to prescribe requirements for the construction and operation of land disposal sites. Major points, regarding the creation, regulation and closure of a disposal facility, outlined in the administrative regulation are: application content; design criteria; engineering plans and specifications; permit-issuance, conditions, termination and renewal; site operation inspection, and closure.

Engineering plan reviews for disposal sites are a joint effort of the Bureau of Environmental Quality, Division of Solid Waste and Division of Water Quality. This measure is the first assurance of minizing the possibility of underground and surface water pollution. Further, soil analyses are required in order to reasonably assure that leachate will not contaminate ground water or streams. Areas having exposed or shallow bedrock are restricted for disposal site purposes unless a safe vertical distance can be provided between solid waste and bedrock. No disposal site shall be located in a five (5) year flood plain. Those disposal sites located within a one-hundred (100) year flood plain shall be protected by impervious dikes.

Disposal of sludge from municipal wastewater treatment plants is permitted by the Division of Solid Waste under an OTHER METHODS PERMIT. This type disposal does not require daily cover, however, such a site must meet requirements for intermediate and final cover that will support vegetation. However, special limitations for the operation of such a disposal site shall be in writing and treated as a part of such permit. The moisture content of the sludge at the time of disposal shall not exceed more than fifteen percent (15%) moisture.

Although Kentucky is a predominately rural state, agricultural waste, such as, animal feedlot waste does not fall under the regulatory jurisdiction of the Division of Solid Waste and such waste CANNOT be disposed of in a land disposal facility. The Division of Livestock Sanitation, Department of Agriculture of the Development Cabinet has the responsibility for animal feedlot waste.

The disposal of septic tank pumpings is under the regulatory jurisdiction of the Department for Human Resources, Bureau of Health Services, Office of Consumer Health Protection. Such waste CANNOT be disposed of in a land disposal facility.

As of November 1, 1974, there were one-hundred fifty-eight (158) land disposal sites that hold a permit from the Bureau of Environmental Quality, Division of Solid Waste. These land disposal sites are classified by types and numbers as follows: 123 sanitary (receiving residential and commercial waste); 23 industrial (receiving industrial by-product waste only) and 12 OTHER METHOD OPERATIONS (receiving special limitation types of waste, e.g. wastewater treatment plant sludge, etc.). In the one-hundred and twenty (120) counties of the Commonwealth, twenty-four (24) counties do not have a permitted land disposal site, while the urban-industrialized areas of the state have more than one site in each of the classification types. In order to be consistent with Area Development District planning efforts, as well as solid waste regional field office jurisdictions, sites have been identified by classification by area development district as shown in Figure III.

Based on a density of 1,000 pounds per cubic yard, the aforementioned 123 land disposal sites have an ultimate capacity as follows: 51 sites less than 150,000 tons, 56 sites between 150,000 and 500,000 tons, and 16 sites more than 500,000 tons of waste.

Of the 158 permitted land disposal sites, 38 have had identifiable leachate problems at some time. These problems are attributable to improper operation and/or the failure to utilize proper construction techniques. At 26 of these sites, leachate problems are being experienced in varying degrees. There are NO leachate monitoring wells under the jurisdiction of the Division of Solid Waste.

Over one-million and nine-hundred-thousand (1,900,000) persons or sixty percent (60%) of the Commonwealth's population is served by an approved disposal site. It should be noted many of these sites have a moderate to short life expectancy. For example, at the present time, in an urban-industrialized area of the state, the composite life of land disposal sites is calculated to be approximately four (4) years. In view of these conditions, coupled with other influencing factors, solid waste management WILL BE significant in state land use planning. The 1974 General Assembly passed H.B. 462 which created a Land Use Planning Council.

ENFORCEMENT PROCEDURES:

The Kentucky Division of Solid Waste participated in a Federal grant in the amount of $30,000 during FY 74. The objective of this grant was the closure of forty-two (42) open dumps. Results were as follows: Twenty-four (24) dumps closed, four (4) dumps converted to landfills, while fourteen (14) dumps have actions pending. These results were achieved by one-hundred eighteen (118) inspections and/or meetings on the forty-two (42) enforcement cases. These actions resulted in sixty-six percent (66%) of the forty-two (42) dumps being closed.

SOURCE REDUCTION AND RESOURCE RECOVERY:

There is NO state legislation governing source reduction and resource recovery. The bottle bill introduced to the last session of the Kentucky General Assembly was unsuccessful. Regional solid waste management and/or resource recovery authorities ARE NOT prohibitive in Kentucky, however, since there is not any state funding available for this effort it is conducted on a patriotic basis by civic groups and concerned citizens.

Resource recovery efforts are being conducted in the state through the efforts of local planning groups, such as the area development district. Also, the Tennessee Valley Authority (TVA) is considering a proposal to build and operate a solid waste processing plant that could service twenty-one (21) counties in the south-western portion of the Commonwealth. This plant would have the capacity of handling 1,000 tons of solid waste per day. The waste would be ground and separated into its various component parts. Materials such as ferrous metals, aluminum, glass, etc., would be recovered and sold and the combustible portion would be pelletized and burned, along with coal, as fuel in one of the Kentucky TVA power installations.

HAZARDOUS WASTE MANAGEMENT:

The 1974 Kentucky General Assembly enacted KRS 224.890 which provides that no person engaged in collection, hauling and disposal of hazardous wastes on a seasonal or continuing basis shall dump at any permitted or unpermitted disposal facility without first obtaining a permit from the Department for Natural Resources and Environmental Protection. In addition, the Commissioner (Bureau of Environmental Quality) may require licensing of a hauler of any substance which poses a threat or hazard to the environment and public health. This legislative enactment became effective July 1, 1974.

Hazardous waste as used in the legislation is defined as "Any substance or combination of substances, the depositions of which may create a threat to public health or to animal and aquatic life forms."

It is felt the provisions of KRS 224 cover the transportation, processing and dumping (disposal) of hazardous waste. Generation of hazardous waste is not regulated in Kentucky, as this would entail specifying the products a company could manufacture and the production process they must utilize.

With regard to Hazardous Waste Survey results, a questionnaire was forwarded to approximately one-hundred seventy (170) selected industries. This survey was designed to identify the type or kind of hazardous waste generated, volume of waste, collector (name and address) and the disposal site receiving such waste. Many of these selected industries have replied and approximately forty (40) collectors and haulers have been identified. Each of these will be forwarded an application form for a permit to transport hazardous waste.

PUBLIC AFFAIRS:

The public affairs program for the Division of Solid Waste has the able assistance of William D. Holland, Federal Assignee for Kentucky. However, there is still the apathy of public officials as they deal with solid waste management, largely due to the fact, in most areas, rural as well as urban, residential as well as commercial and/or industrial, the public official still leaves solid waste as the UNPLANNED pollution. Areas are eager for development, therefore, they plan for sewer, water, streets and electricity but in most instances, the forgotten element is solid waste.

Technical assistance functions for the Division of Solid Waste are conducted for all fifteen (15) Area Development Districts and local jurisdictions - counties and cities. These activities include conducting studies for collection and disposal, providing cost analyses, reviewing and commenting on solid waste management plans and conducting special waste studies in areas such as school and hospital wastes.

There is an interaction of both public and private interest groups with regard to the Division of Solid Waste as it is the responsibility of all three (3) programs of the Division to coordinate efforts with public officials, industrial leaders and their respective counterparts to strengthen the solid waste management of the Commonwealth.

CRITICAL AREAS FOR FEDERAL ASSISTANCE:

The Kentucky Division of Solid Waste feels there still exists a basic need in most states for the type of training of their personnel that had been provided in the training courses which in the past were offered in Cincinnati. A situation needing Federal assistance, we feel, is in the area of construction grants to under-priviledged, poverty stricken, rural communities such as dramatized by the Appalachian regional health demonstration in solid waste. These areas with their depressed economy are unable to come up with the capital necessary to purchase the equipment, land and land improvements necessary for a sanitary landfill, and/or a collection system.

PRESENT STATUS
of
MARYLAND SOLID WASTE MANAGEMENT PROGRAM
November 13, 1974

The following is a brief discussion of the current status of solid waste management in Maryland. This report has been prepared at the request of OSWMP for the November 14 - 15 EPA - NSWMA Conference in San Francisco. The format used is that suggested by OSWMP.

A. LAND DISPOSAL OF SOLID WASTE

a. Solid Waste Disposal is regulated by Article 43, Sections 394, 394A, and 394B of the Annotated Code of Maryland. Section 394 says that a State Health Department permit is required for "a refuse disposal system for public use." It further requires complete plans and specifications together with such information as the State Health Department may require. In 1969, the Division of Solid Waste Control drew up and began to utilize guidelines entitled "Sanitary Landfill Procedures for Approval." These Procedures spelled out that information to be included in the detailed engineering plans and specifications such as:

(1) The location, depth, and type of underground water sources within the sub-drainage basin in which the property is located.

(2) The location of nearby streams.

(3) Methods of prevention of pollution of surface and subsurface waters.

(4) Analyses of soil samples collected from various places and at various depths at the proposed site.

(5) A piezometric map showing the seasonal high water table.

(6) The type and depth to bedrock.

The Division of Solid Waste Control has employed one qualified groundwater hydrologist holding a Ph.D in Geology to submit geologic opinions on proposed land disposal sites.

Opinions are also sought from geologists representing the Water Resources Administration and the Maryland Geological Survey, both at the time of the preliminary examination of the site and upon review of final plans. Monitoring wells are required.

b. The 1974 session of the State Legislature passed an amendment to the existing permitting statute to provide that no person shall collect, transport, process nor handle sewage sludge without first having received a permit from the State Department of Health. The Division of Solid Waste is presently drafting regulations for the implementation of this statute. The Division is also permitting sites. Because of personnel problems this program will not be implemented on a statewide basis until mid-1975 at the earliest. To date, we have restricted sludge to public lands that will not be used for food-chain crops because we do not know how to deal with the zinc-cadmium problem.

Maryland does not regulate animal feedlot waste at present. Septic tank pumpers are regulated by county health departments.

c. Maryland now has some 88 land disposal sites in use. I am presently unable to say at how many leachate is a known problem, because I do not know the criteria utilized in defining what is a problem. Several of our twenty remaining small open dumps are on wetland and do have some leachate migrating to surface waters. Two permitted sanitary landfills cause significant iron and chloride change in streams flowing through them. We have monitored groundwater around our permitted sanitary landfills for five years and have no known groundwater change. Twenty-three sites have monitoring wells. One site has a leachate collection system. Forty sites have sediment control ponds where leachate could be treated or spray irrigated if necessary. It has been our experience that most sites that are operated with the area method to considerably higher elevations than the surrounding ground surface will produce some minor quantities of leachate if slopes develop gullies that expose refuse. This surface leaching tends to dry up with proper grading and stabilization.

d. Forty-three sanitary landfills presently operate under State Permit. These permitted sites serve approximately 75% of the State's population. At the present time, Maryland does not specifically classify certain landfills as approved for hazardous wastes. We do specify that certain landfills shall not accept hazardous wastes.

e. Capacity of sites is as follows:

Less than 150,000 tons - 12

Between 150,000 and 500,000 tons - 22

More than 500,000 - 54

B. ENFORCEMENT ACTION

Enforcement action could be taken by State Board Order, revocation of permit, or injunction. The Division has closed three sites by Order and one by injunction in 1974.

C. RESOURCE RECOVERY

Regional authorities are permitted for resource recovery but none have been created to date. The Maryland Environmental Service has participated in funding two major resource recovery projects. Resource recovery planning is being conducted at both State and local levels. One community has passed returnable container legislation, but has been unable to implement same because of court action. Bottle bills have been proposed in the State Legislature for the past three years but have failed. Major resource recovery projects are being planned for three counties in Maryland at present.

D. HAZARDOUS WASTE MANAGEMENT

The Division of Solid Waste Control is presently completing a study of sources and types of industrial hazardous wastes in Maryland. There is at present little specific regulation of hazardous wastes with the exception of pathological wastes from hospitals and nursing homes.

E. PUBLIC AFFAIRS

The Division frequently furnishes speakers for Civic or Technical Organizations. A newsletter is being planned for January - 1975.

F. CRITICAL AREAS FOR FEDERAL ASSISTANCE

OSWMP can be of considerable help to Maryland with Grant assistance and and technical advice in setting up a hazardous waste program. Hazardous Wastes. Guidelines would be very helpful.

The Commonwealth of Massachusetts has a statewide Solid Waste Management Plan calling for regionalization and resource recovery where economically feasible. At present the Commonwealth through its Bureau of Solid Waste Disposal of the Department of Public Works is implementing the first regional facility. A brief description of the implementation process follows:

The communities of Lawrence, Andover, North Andover, Methuen and Haverhill have spent the past several years in a joint effort to find a common solution to their solid waste disposal needs. Through elected representatives to the Greater Lawrence Solid Waste Committee (GLSWC) and with the assistance of the Commonwealth's Bureau of Solid Waste Disposal (BSWD), the communities have been exploring and reviewing numerous alternatives. Aware of an increasing national interest in recovery of valuable resources in solid waste, the communities have elected to participate in a Regional Resource Recovery Solid Waste Processing Facility, which will be capable of processing all municipal and industrial waste generated within the communities.

Plans for the facility have been progressing rapidly. A site in the City of Haverhill has been selected, and a request for proposals (RFP) has been designed, and will be issued shortly. The RFP will solicit proposals from industry for the design, construction and operation of the facility. Proposals will be evaluated and a contractor selected through a process of competitive negotiation.

The facility will be privately operated on Commonwealth-owned property. Refuse will be aggregated at transfer stations (or where most economical, refuse will be transported directly), and hauled to the facility for processing. The recoverable portion of the refuse will be marketed and the remaining unrecoverable residue will be landfilled in a Commonwealth-owned and privately operated sanitary landfill. The communities will be charged a fee per ton of refuse based upon the cost of processing and reduced by the incoming revenue from the marketable products.

Location

Representatives of the GLSWC and BSWD have evaluated several potential sites in the Greater Lawrence area for construction of the facility. After a thorough examination and evaluation, a 42 acre parcel in the "Neck" area of Haverhill was selected by GLSWC and BSWD and approved by the City of Haverhill. This location was chosen due to its accesibility from nearby major highways and general suitability.

Current Status

On behalf of the communities, BSWD is issuing a Request for Proposals for the design, construction and operation of the facility. Proposals will be evaluated by the communities (through their representatives to the GLSWC), BSWD, and the MITRE Corporation. Selection of a contractor will be made in the Spring of 1975, and the facility is expected to be operational in 1978.

Recognizing that a facility capable of accepting refuse from a larger region than the five original communities would benefit all the communities utilizing it, the GLSWC and BSWD are asking contractors who bid for the design and construction to indicate specifically what these economies are.

The Commonwealth intends to continue implementation of regional solid waste facilities with maximum feasible resource recovery in other areas of the State. Work continues with local and regional officials throughout the State to develop the cooperative regional climate necessary for the success of a voluntary regional program.

EPA State Report Summary
Solid Waste Disposal in Michigan
November 1974

A. Land Disposal of Solid Waste

Michigan has made available as of January 10, 1974, to local government, planners, consultant engineers and private refuse operators, geologic and hydrologic guidelines for evaluating sanitary landfill sites. These guidelines are designed to:

1. Aid those searching for landfill sites by providing a basis for comparison of the relative merits of various potential sites.
2. Provide a basis for evaluating the suitability of selected sites in their natural condition with respect to potential hazards to surface and ground water environments.
3. Determine if the proposed site could be used for a landfill in its natural condition without engineering improvements.

The guidelines discuss surface drainage and topography and with appropriate sketches indicate minimum isolation distances both vertically and laterally from refuse to ground and surface water for typical geologic formations.

A brief discussion of cover material and considerations necessary relative to site development when favorable geologic conditions are not available are included.

All new sites are reviewed by a member of the state staff and with very few exceptions by a department geologist who determines details concerning the site geology that will have to be submitted before site approval can be obtained. Generally this data is submitted prior to any design work on the site.

The disposal of wastewater sludge does not, by statute, fall under the authority of the Solid Waste Management Division per se. The rules however do provide the responsibility for specific approval for the acceptance of the material in a landfill operation. Under this authority we require that sludge of any kind be dewatered to the point that it will not release any fluid under the normal operating pressures of landfill equipment.

As we do not have large animal feed lots our problems in this area are very minimal. There is at present no specific licensure of these operations however they are controlled through the general powers of our Water Resources and Air Pollution Control Commissions. Consideration is being given to specific authority in this area but such has not progressed to date.

The septic tank cleaners and liquid industrial waste haulers are controlled by separate state statutes and disposal sites for these facilities are approved by a division within the Department. These haulers are not permitted to discharge in a licensed landfill and are required to utilize only approved disposal areas. With reference to sewage treatment plant wastes the Department now requires plant proposals to include all details on transportation and final disposal of sludge, if such is not handled in the confines of the plant. Some municipal sludge is being used on farm lands as a soil conditioner and a recent court decision permitted the continuance of this process in a contested case. Septic tank cleaners are now required to utilize sewage treatment facilities if a contract for a specific service is within 15 miles of a municipal sewage treatment plant. When not available, land disposal in an approved area is permitted.

Michigan's present enforcement program relies on local health department participation. There are areas in the state where their involvement has been very minimal which has resulted in a request this year for a certification program for their continued involvement. I mention this, for it has been relatively impossible for the Division's limited staff of surveillance people--7 in number--to adequately survey all operating areas in the state. In view of this I hesitate referring to numbers even though I feel our figures for the metropolitan counties are fairly accurate.

With these constraints:

No. of refuse landfills in use - 700
No. where leachate is a known problem - 9
No. with monitor wells - 8
No. of leachate collection and treatment facilities - 4
No. of such facilities at which leachate has been produced - 2
No. of land disposal sites licensed - 488
Percentage of population served by approved facilities - 50%+
No. of state approved sites for hazardous/toxic waste disposal - generally 3

The disposal of all toxic and hazardous waste must be specifically approved by the local health department or the Solid Waste Management Division.

Local solid waste management plans are just being submitted that will contain total designated land for landfills. The Division has not developed this data.

The state land use plan for Michigan is in the process of being developed. We do envision some real problems in the necessary considerations which will have to be given solid waste management in view of the vested zoning interests. In the initial assignment it is anticipated that somewhere near 40,000 acres will have to be set aside for solid waste management. The classification program developed for the state land use plan does stipulate a critical area approach. This considers solid waste management as a minor land use but a major controversial issue and will share identification with such items as flood plains and public utilities. During the next year the land use plan process will be developing the criteria for critical area land use.

B. Enforcement Procedures

The Department's enforcement procedures are established by the solid waste act and the administrative procedures act. In general we have injunctive powers but have considered this only on rare occasions. With the Department's Commission being very sensitive to the need for public exposure of issues and a complete understanding of the issues between the Department and the operator, we do follow with some success the informal hearing approach between the parties. The operator is made aware of the violations and is permitted to comment with counsel if he desires. Generally the informal hearing results in the development of mutually agreeable solutions to the problems with a time table for correction.

Continued violations would then result in action by the Department to either deny a license or revoke a license. This is done with notice and an offer of a hearing upon request of the operator. A request for a hearing will result in a contested case hearing before a hearing examiner. This case is then conducted as a legal hearing with each side represented by legal counsel. The hearing officer, upon completion of testimony, then develops his decision and recommendation to the Director. The Director then determines the course of action. If his decision is in favor of the Department the operator may file an appeal with the circuit court.

One other approach that has been used quite successfully to close operations that are in non-compliance without legal basis, or in other words have not formally applied for a license, is to develop a formal cease and desist order signed by the Director. Should this process not achieve the desired results the matter is then referred to the Attorney General for action. We have had no reason to date to follow through on failure to comply to the Director's orders. There are a few pending actions which may necessitate further action shortly.

We have this year conducted contested hearings requested by local government and citizen groups in reference to action by the Department in issuing a license to a disposal facility. Thus far the Department's action has been upheld. We anticipate the frequency of such hearings will increase.

The hearings conducted for the past year have been as follows:

Informal hearings - 45
Contested Case hearings - 5

C. Source Reduction and Resource Recovery

Resource recovery facilities have been developed, with one exception, on only a small scale. The Huron Valley resource recovery facility in the Detroit area has put together a very extensive program of metal recycling. Their operation presently includes the processing of junk cars into its many components--aluminum, copper, brass, stainless steel, ferrous metals, zinc and rubber. They also process data processing equipment, electronic devices, motors, waste products from auto crushers and have again begun the salvage of metals from two of our authority incinerators.

Under Michigan statutes it is possible to develop an authority for solid waste that can encompass many units of local government. We have three authorities that service about 350,000 people each and each involve seven through 14 local units of government. A number of small authorities are in operation with others being considered.

At the present time state funding is not available for local government and/or private industry involved in resource recovery. Proposed legislation does deal to a degree with this aspect.

There is some reference to resource recovery planning at the local level in the high population density areas, with reference to the consideration of a total resource recovery system. At the present time Ingham County and Grand Traverse County are considering a pyrolysis type facility. Under proposed legislation the state would be required to develop a state plan with specific direction toward resource recovery.

There are not at the present time any state laws relating to purchasing policies of recycled materials. The state purchasing office however has developed a policy concerning the purchasing of a certain percentage of paper made from recycled waste paper.

There have been a number of bills introduced in the legislature on beverage containers, however at this point none have received sufficient support to be passed. There has been very little effort on the part of local government to adopt beverage container or packaging controls based probably more on the inability to enforce such legislation rather than a lack of desire. We expect in Michigan that efforts will continue to develop legislation on beverage containers. To date there has been no legislation proposed forcing the use of energy recovery systems in solid waste management at either the state or local governmental level.

The legislature at the present time is considering Senate Bill No. 946 which will establish a resource recovery commission designed to provide some significant responsibility in the area of resource recovery. The bill establishes a necessity to work closely with private enterprise in the promotion, development and construction of recovery facilities and provides a penalty for areas that do not implement their solid waste plans within an established time frame. The bill does provide latitude for financing but does not permit the state to operate a facility. All operations in which the agency would be involved would be through a contractual arrangement with local government and any combination thereof and private enterprise. Details of the bill should be available sometime after the first of the year.

The State Chamber of Commerce has been actively engaged in promoting resource recovery and many of the environmental groups have shown a real interest in this approach.

D. Hazardous Waste Management

Existing state legislation involving hazardous waste is controlled by the Department of Natural Resources in the area of transportation, processing, and disposal. The program is based in two separate divisions within the Department of Natural Resources depending on the nature of the material. Liquids are controlled under one statute and solids under another. These comments do not include discussions concerning the levels of material discharges in municipal and industrial sewage treatment plants. This of course is done under that particular control program. At the present time very minimal survey work has been conducted on hazardous waste quantities from the standpoint of solids. We expect to carry on this program during the next year, along with activities involving our appointed hazardous waste committee which includes representatives of industry, local government, public health, and staff.

E. Public Affairs

The Division participates in many meetings throughout the state to discuss the solid waste management aspects of planning, and implementation. Much of the consultation activities performed are with local governmental agencies, private enterprise and consulting engineers. We have no activities with a specific public or private interest group but deal with many organizations including the Michigan Municipal League, Michigan Townships Association, county commissioners, and numerous environmental groups located throughout the state.

MINNESOTA SOLID WASTE MANAGEMENT REPORT

MINNESOTA POLLUTION CONTROL AGENCY
Solid Waste Division
St. Paul, Minnesota
January, 1975

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Introduction

Critical Areas for Federal Assistance

1. The continued absence of federal financial assistance in the form of EPA program grants in the area of solid waste management is putting an unreasonable burden on state program budgets, having the effect of putting Minnesota and other state solid waste management programs at a virtual standstill, outside of possible hazardous waste planning grant programs.

In the past, the availability of these grants and our utilization of them in a number of our programs and services, (many of which owed their existence to program grants), strengthened and materially aided the development and diversity of our entire program. Therefore, we attach the highest priority to the reinstatement and renewal of the program as we plan and develop for the future. It is extremely important that the federal government revive some arrangement whereby financial assistance may be granted to states that have delayed or postponed vital solid waste programs.

2. Hazardous Waste Management, Waste Sludge Disposal, and Resource Recovery are three (3) major solid waste management programs in Minnesota that deserve a high budget priority on the federal level.

3. EPA office of Solid Waste Management Program research staffing should be increased to address the urgent solid waste management problems of (a) analyzing leachate treatment systems for sanitary landfills and (b) maximizing the effectiveness and efficiency of solid waste collection systems.

4. Federal EPA technical assistance programs are imperative for the effectiveness of the Minnesota Pollution Control Agency Solid Waste Management Program.

Preface

In 1970, Minnesota spent $62 million to collect, transport and dispose of 2.11 million tons of refuse. Assuming no growth in population or inflation, Minnesota will spend approximately $111 million in 1980 to handle 5.5 million tons of municipal solid waste.

Prior to 1969, there was no real control over solid waste management in Minnesota. The location and number of dumps, the types and quantities of solid waste generated throughout the state were all unknown. Refuse collection was uncontrolled and in some areas not available to the residents. The problems of solid waste management rested solely with local governing bodies.

The 1967 State Legislature placed the authority for regulating the management of solid waste with the Pollution Control Agency. A solid waste management plan for Minnesota was prepared and approved by the Minnesota Pollution Control Agency and the U.S. Environmental Protection Agency. From these planning directives, state solid waste regulations were developed and adopted by the Minnesota Pollution Control Agency for control of the storage, collection, transportation and disposal of solid waste, including agricultural wastes and abandoned motor vehicles.

The state solid waste management program consists of a number of goals and objectives. The following discussion outlines the objectives and the degree of success in achieving each.

MINNESOTA SOLID WASTE MANAGEMENT REPORT

Land Disposal of Solid Waste

The State's solid waste regulations require that a sanitary landfill be located, designed and operated in such a way that the quality of the State's surface and underground waters are protected. Surface waters are protected primarily by the prohibition of sanitary landfills within specified distances of lakes, streams, flood plains and wetlands. Groundwater protection is provided in several ways, the most important of which is the initial hydrogeologic investigations required at any site being considered for a sanitary landfill facility. By determining in these investigations, the bedrock characteristics, soil types, depth and flow direction of groundwater, the landfill may be designed so the optimum practical groundwater protection may be provided. Depending on site characteristics, the hydrogeological liner may be required for a liner leachate collection system.

In addition to the general sanitary landfill operational requirements that serve to minimize the amount of moisture entering the fill area, Minnesota also now requires that every permitted sanitary landfill have an approved monitoring system designed to detect early signs of leachate generation. In most cases, the monitoring system consists of a series of groundwater wells, but at sites where the groundwater is relatively deep, in lieu of groundwater wells, pressure vacuum lysimeters are installed directly beneath the refuse. Soil moisture samples from the lysimeter are then periodically analyzed to check for vertical migration of leachate toward the zone of saturation.

From a recent inventory of municipal sewage treatment plants, it was determined that about 70% of the plants dispose of waste sludge by land spreading. To date, no specific permit procedure has been established to regulate the disposal of municipal sludge. Sludges from industrial wastewater treatment plants and other process sludges are currently being disposed of in a variety of techniques such as landfilling, lagooning, and land spreading. Amounts of these types of sludges are relatively small compared to municipal sources. It is expected volumes will increase significantly as more stringent water pollution control facilities are constructed.

During the past year, an inventory and analysis at the state's solid waste land disposal facilities revealed the following information:

1. Total number of solid waste land disposal facilities now in use....................................525
   (400 unpermitted dumps and 125 sanitary and demolition landfills)
2. Number where leachate generation has been observed.10
3. Number with monitoring wells.........................100
4. Number with leachate collection and treatment facilities...2
5. Number of such facilities at which leachate has been produced.......................................1
6. Number of land disposal sites with state permit/license/approval.......................................125
   (sanitary and demolition landfills only)
7. Estimated percent of state population served by approved sites.................................90%+
8. Number of state approved sites for hazardous/toxic waste disposal.................................2

9. Number of sites with ultimate capacity of:

Less than 150,000 tons	32
Between 150,000 and 500,000 tons	44
More than 500,000 tons	34

The fields of solid waste management and land use planning are closely related at the county and state level. A state permit for a solid waste disposal facility is valid only if all other necessary governmental approvals have been obtained. Therefore, even if a state permit has been issued, the site must be properly zoned before construction and operation of the solid waste disposal facility begins. The state regulation prohibiting sanitary landfills within floodplain areas are based on the defining of floodplain areas through the state/county floodplain zoning program.

At the state level, the state solid waste regulations are structured according to statewide floodplain and shoreland management policy, the state policy on conservation of wetlands. The state's solid waste management program also complies with Minnesota's policy of designation of critical areas in the state where development is controlled.

Agricultural Wastes

Minnesota Pollution Control Agency regulations for the Control of Wastes from Livestock Feedlots, Poultry Lots and Other Animal Lots were adopted on April 16, 1971, in compliance with Laws 1969, Chapter 1046 (codified as Minnesota Statutes, Section 116.07, Subd. 2 and 4). Because it was recognized that animal manure is a resource to be utilized as a fertilizer and soil conditioner rather than a waste, regulations were developed under the Solid Waste Statutes with the intent of promoting utilization of the material.

Minnesota contains approximately 106,000 confined animal facilities (as defined by Minnesota Pollution Control Agency Regulations). It is estimated that about 50,000 of these may need modification to lessen pollution to surface waters of Minnesota. Over 3,000 permits have been issued to date.

Minnesota Laws 1973, Chapter 573, authorized the Agency to adopt rules governing the processing of animal facility permits by the county government. On January 12, 1974, Regulations for the Processing of Feedlot Permits by the Counties and the Minnesota Pollution Control Agency were adopted allowing the counties to process feedlot permits in cooperation with the Agency. Twenty-four (24) out of 87 counties have entered into the permit processing program thus far.

Under Minnesota Regulations, the Agency staff has developed a program to 1) correct existing pollution problems and 2) also prevent new animal facilities from causing a pollution problem. Existing pollution problems are being handled on a complaint basis. The program in Minnesota, which requires the farmer to evaluate his operation at times of investment, is more managed as an educational tool which can assist the farmer in his operation and which, in the long run, may save him money. Permits are required when the applicant is:

- starting new operations
- expanding existing operations
- modifying operation
- change ownership.

A 10% state income tax credit is available to farmers for eligible pollution control devices and equipment used to correct a pollution problem.

Enforcement Procedures

There exist several administrative and/or legal actions available by statute to the Agency by which it can provide for the continuance, closing, and/or revocation of an Agency permitted solid waste facility. These actions are:

1) Administrative hearing before the Minnesota Pollution Control Agency Board to obtain compliance with applicable solid waste regulations (order to show cause).
2) Declaration of Agency Board Emergency Powers to close facility.
3) Administrative hearing to revoke Minnesota Pollution Control Agency facility permit.
4) Injunctive relief through the Attorney General's office in any court of competent jurisdiction.
5) Initiation of Agency Board administrative procedure (stipulation agreement).
6) Issuance of an Agency Board Administrative Order.
7) Enforcement of local solid waste regulations by local units of government (county, municipality).

While actions 2 and 3 can provide for a fairly expeditious closing of a facility, it should be noted that a public hearing to revoke the permit would be required in either of these actions if the permittee would not surrender the permit voluntarily or was not ordered to do so by the courts. In an emergency situation, a solid waste facility may be closed or an operation suspended immediately where there is a finding that there is imminent danger to the health and welfare of the people of the state as a result of the pollution of the air, land, or water.

During the past year, administrative and judicial remedies available and enforcement actions taken during the past months consisted of the following:

1) Judicial relief to close two (2) dumps
2) Court orders to close (stipulation) 150 dumps
3) Order to Show Cause - one (1) sanitary landfill (upgraded operation to conform with condition of permit).

Source Reduction

A major consideration in solid waste management is source reduction which is one of our most important goals in Minnesota. Section 6 of Chapter 116F, Minnesota Statutes (Supp. 1973), which became effective on May 25, 1973, directs the Minnesota Pollution Control Agency to review new or revised packages or containers sold at retail in Minnesota to determine whether the package or container will constitute a solid waste disposal problem or be inconsistent with the environmental policies of the state. If the Agency decides that a particular package or container creates a problem, the Agency may, after holding public hearings, issue an order prohibiting the sale of the package or container in the state. The prohibition remains in effect until the last day of the next following legislative session unless extended by action of the legislature. Section 6 of Chapter 116F also requires that the Agency must adopt guidelines identifying the types of new or revised packaging subject to its review, and this has been accomplished.

Resource Recovery

Regional planning, cooperative studies, and approaches are encouraged and can be accomplished through legal inter-county arrangements. Minnesot Laws 1973, Chapter 748 provides a $1.5 million grant-in-aid program (matching grants) and authorizes the Agency to establish a statewide program to promote resource conservation and recycling. Immediate project priorities fall under four (4) headings:

1. To design programs for the encouragement of solid materials conservation and the reduction of environmental impact from solid waste. In 1971, the legislature initiated a state-funded project to reimburse counties for the inventory and collection of abandoned motor vehicles. To date, over 75,000 abandoned motor vehicles have been moved to market under the state subsidy program. The number of vehicles moved to market under this program has recently decreased due to the availability of higher prices for scrap iron. This factor has resulted in a lessening need for subsidization.
2. To create public education programs to point out the importance of conserving resources and reducing waste.
3. To prepare studies which analyze potential martkets for recycling materials and programs to encourage market demand for these materials.
4. To promote feasibility studies including demonstration projects for recovery systems and facilities.

Hazardous Waste Management

The State of Minnesota has adopted comprehensive legislation for hazardous waste management. The legislation will lead to the following regulatory agency responsibilities:

1. Metropolitan Counties
    a. Prepare a county or multi-county hazardous waste management plan. This plan must include an identifi-

cation of potential generators, categories and quantities of hazardous waste generated within the county planning area.

b. Adopt ordinances relative to hazardous waste generation, licenses, license fees, classification, labeling, transportation, treatment/disposal facilities consistent with hazardous waste rules and regulations and model ordinances and guidelines proposed by the Minnesota Pollution Control Agency.

c. Review and issue hazardous waste generator licenses.

d. Review and issue licenses for hazardous waste treatment/ disposal facilities.

2. Regional Planning Agency

a. Review and approve county hazardous waste management plans, ordinances, and license procedures.

b. Prepare a Regional Hazardous Waste Management Plan including the designation of the hazardous waste treatment/ disposal facilities to serve the region.

c. Prepare an annual inventory of the quantities, categories, and disposal locations of hazardous waste generated in the region.

3. State Pollution Control Agency

a. Review and approve county and regional hazardous waste management plans, ordinances, licensing procedures and inventories.

b. Develop a statewide hazardous waste management plan detailing the location of hazardous waste treatment/ disposal facilities and temporary storage sites throughout the state and the need for interstate transportation of hazardous waste. The statewide hazardous spill contingency plan will also be integrated into this state plan.

c. Promulgate statewide hazardous waste rules and regulations including provisions for the classification, identification, labeling, temporary storage, collection, handling, transportation, treatment, and disposal of hazardous waste, and develop model ordinances for use by the counties.

d. Review the hazardous waste generator license before issuance by the county generator licensing agency and exercise veto power if the license violates state hazardous waste rules and regulations. Depending on staff limitation, the state may only review major hazardous waste generator licenses.

e. Provide technical assistance to the counties, regional planning agencies, and generators. Incorporate training courses relating to hazardous waste classification, labeling, handling, storage, and transportation into the solid waste operator training program.

f. Issue hazardous waste treatment/disposal site operating facility permits and review and periodically check the monitoring results supplied by the hazardous waste treatment/disposal facilities.

g. Conduct an annual inventory of hazardous waste quantities generated throughout the state.

4. State-Public Service Commission

   a. Incorporate a hazardous waste transportation licensing system into the existing hazardous materials transportation licensing procedures using the technical assistance of the Minnesota Pollution Control Agency and the Federal Department of Transportation.

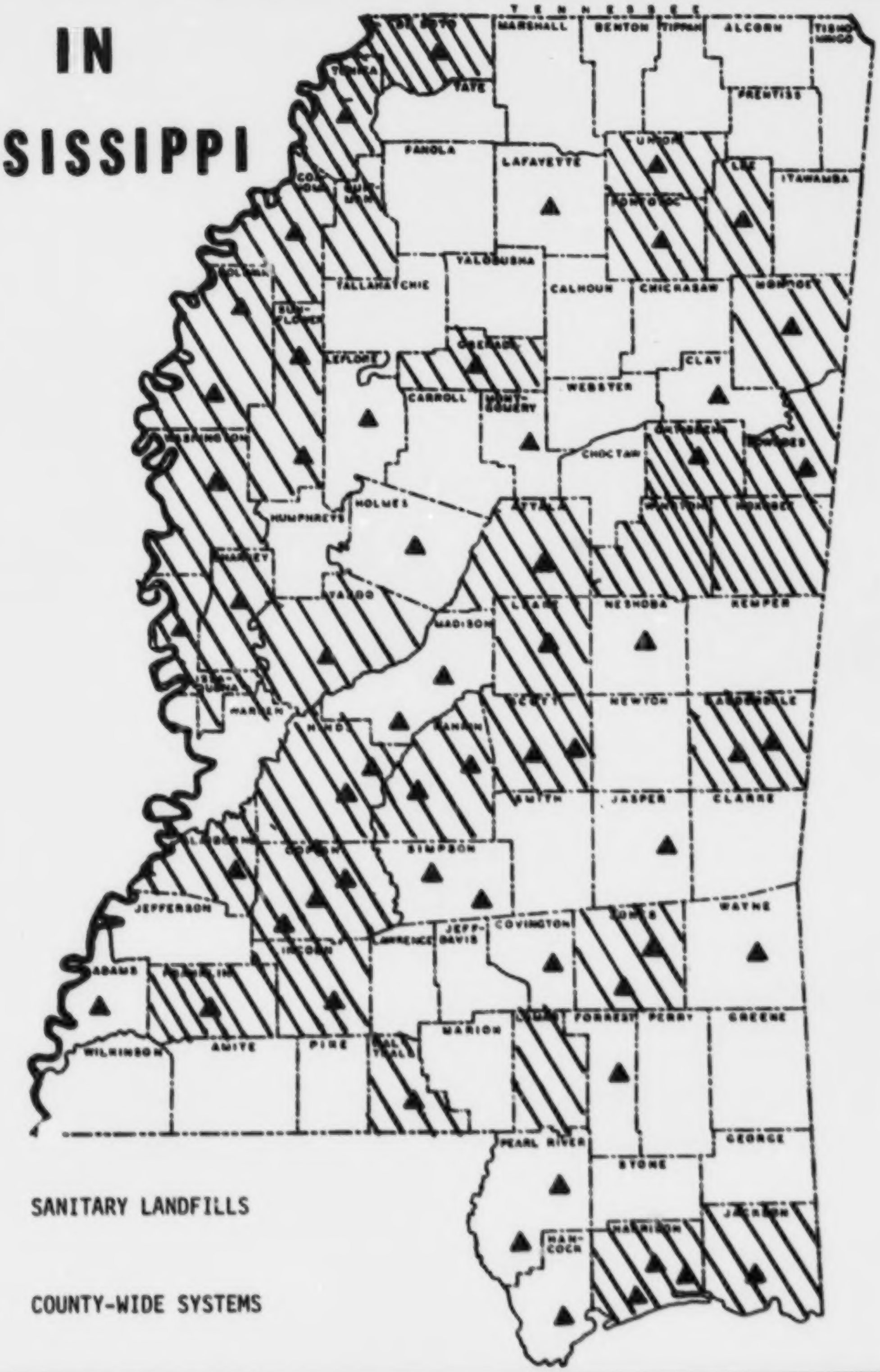
   b. Enforce the hazardous waste transportation license through existing public service commission transportation enforcement procedures.

A generation study has been completed for the metropolitan area including the amounts and kinds of hazardous wastes generated. The report developed waste generation data and concluded that approximately 38,000 tons of potentially hazardous waste (non-oil) and approximately 32,500 tons of waste oil are generated each year in the eight (8) county study area.

Public Affairs

Public information programs are an on-going portion of the present Solid Waste Management Program. The Division's Solid Waste Management Seminar is presented on an annual basis with various topics and emphasis areas. An animal facilities pollution control seminar is also presented regularly throughout the state. In addition, regional solid waste seminars for county solid waste officers are presented once or twice a year and resource recovery seminars are periodically scheduled. The Division regularly distributes brochures and manuals in such areas as solid waste management, sanitary landfill operation, animal waste, and inter-governmental cooperation. Frequent use is made of the Division's quarterly newsletter which is widely distributed. Within the Division, opportunities are available for all staff members to devote some portion of their time to the training program, to attend meetings to educate themselves as members of the Solid Waste Division, and to serve as speakers to civic, citizen, and government groups. As a further goal, the Division seeks to continually improve and do more in the public information area.

SOLID WASTE MANAGEMENT IN MISSISSIPPI



▲ SANITARY LANDFILLS

\\\ COUNTY-WIDE SYSTEMS

MISSISSIPPI'S SOLID WASTE MANAGEMENT PROGRAM

The Solid Waste Disposal Act of 1974 authorizes the State Board of Health to exercise such supervision over restrictions, equipment, methodology, and personnel in the management of solid waste as may be necessary to enforce sanitary requirements, and the State Board of Health shall adopt such rules and regulations as may be needed to specify methodology and procedures to meet the requirements of the Act.

All proposed sanitary landfill sites must be approved by the State Board of Health. On-site inspections are made and careful attention is given to underlying soil and hydrogeological conditions, cover materials, and the types of solid waste that will be placed in the fill. Soil Scientists with the U. S. Soil Conservation Service and Mississippi Geological Survey personnel advise the Board of Health on each site.

Sludge from waste water treatment plants and septic tank pumpings are disposed of in sanitary landfills. Animal waste is scattered over fields or treated in lagoons.

There are 54 sanitary landfills in Mississippi handling approximately 52 percent of the waste generated. None of the landfills have exterior leachate problems, but no monitoring wells have been installed to determine groundwater contamination.

All of the above-mentioned sites are approved sites and are suitable disposal sites for some hazardous waste materials. A hazardous waste disposal site is presently being developed in Mississippi and will handle most of the chemical waste generated in the northeastern part of the state.

Detail studies are made of each site to determine the suitability of the site, the life of the site, how it will affect the surrounding community, and the best use of the site after it is filled.

Enforcement procedures in the solid waste management program have taken a new approach. It has been demonstrated that cooperation can be obtained without court action. Therefore, no court action has been taken in the past 12 months in Mississippi to bring about compliance.

There have been no source reduction programs in Mississippi and only small resource recovery programs, except in recycling automobiles. Approximately 800 automobiles are recycled each day. Construction steel is being made from most of the metal. A survey shows that an excess of 85 percent of the interstate highway system in Mississippi was constructed with steel recycled from junked automobiles.

The Tennessee Valley Authority is involved in planning a system of resource recovery and energy recovery that will handle the waste from 30 of the northeastern counties of the state, which represents 39 percent of waste in Mississippi.

Studies are being conducted in other parts of the state to establish large recycling programs, but no specific plans have been developed.

The proper management of hazardous waste is included in the Solid Waste Disposal Act of 1974 which designates the State Board of Health as the enforcement agency.

The Division of Solid Waste Management places land disposal sites as the first priority and hazardous wastes as the second priority.

Toxic, explosive, bioaccumulative, pathogenic, and other such substances have been neglected for too long. Work is being done in exploring management of residual flows to determine the source, amount, and nature of hazardous materials. In addition, procedures are being studied on how best to handle hazardous wastes in a safe, environmentally-sound manner which protects the public health. A test site is being constructed to demonstrate the feasibility of disposing of chemical waste by landfill.

The hazardous wastes program includes work being done in the following major areas:

1. Hazardous waste survey.
2. Defining hazardous waste.
3. Hazardous waste technology investigation.
4. Hazardous waste management (regulatory) procedures.

The entire solid waste program in Mississippi operates through an extensive public relations program. All civic organizations, associations, and local community groups are used to promote solid waste management programs.

Assistance is needed from the Environmental Protection Agency in research and technical assistance.

THE MISSOURI SOLID WASTE MANAGEMENT PROGRAM

(Prepared for the November 14-15, 1974 EPA-NSWMA Conference in San Francisco)

INTRODUCTION

In accordance with state reorganization, the Missouri Solid Waste Management Program was housed within the Department of Natural Resources, effective July 1, 1974. The reorganization has effectively combined the air, water, solid waste and land reclamation programs into the Division of Environmental Quality within the Department of Natural Resources. The address to the new department is Post Office Box 1368, Jefferson City, Missouri 65101.

The Solid Waste Management Program operates under the provisions of the Solid Waste Management Law enacted in 1972. The program has four basic activities which are (1) planning and evaluation, (2) technical services, (3) information and training, and (4) enforcement. The program has a budgeted staff of 13, which does not include regional office personnel of the Division of Environmental Quality which conducts the major portion of the solid waste field activities.

The following portions of this summary report shall be outlined as suggested in the E.P.A. request:

A. Land Disposal of Solid Waste

The Missouri Solid Waste Management Law requires the operator of a solid waste processing facility or disposal area to obtain an operating permit from the Department. Rules and regulations for the design and operation of sanitary landfills, demolition landfills and processing facilities were developed and adopted in the fall of 1973. The law and the regulations require the submission of engineering data and plans for the design of landfills and processing facilities. The regulations include criteria for the protection of ground and surface waters from existing and new landfills. The Division of Environmental Quality utilizes the services of a sister division within the Department, the Division of Research and Technical Information (formerly Office of State Geologist), to provide preliminary evaluation of proposed landfill sites prior to development of detailed engineering plans. This preliminary evaluation of proposed landfill sites has been successful in eliminating most sites with undesirable hydrogeological conditions from further consideration of exploration, design, development and use.

The disposal of municipal and industrial sludges, hazardous and toxic wastes, septic tank pumpings, and other special wastes are permitted at a sanitary landfill only if special design data and consideration is provided in the engineering design plans. The criteria used to determine whether such wastes can be accepted include the geology and hydrology of the site, the chemical and biological characteristics of the wastes, quantities of waste, and the safety of personnel. A provision of the Missouri Solid Waste Law permits the disposal of feedlot waste on land without a permit provided a public nuisance or health hazard is not created.

There are presently approximately 361 land disposal sites operating in the state compared to 490 in 1971. There are 52 landfills which have engineering plans approved, and an additional 33 sets of engineering plans have been submitted for approval. The 52 approved landfills serve approximately 60 percent of the state's population. Only one of the approved land disposal sites has a permit to receive most hazardous and toxic waste, however, preliminary engineering plans are under consideration for several additional sites.

Any problems with leachate from land disposal sites can be directly contributed to improper design or poor operation. Twelve landfill sites in the state have been known to have more than minor problems with leachate generation. Most of the problems with leachate have been corrected and several sites have been closed. The required engineering design plans must give consideration to leachate collection and treatment facilities. Twelve of the existing or proposed land disposal sites have provisions for collection and treatment of leachate, and eight of the sites have provisions for monitoring wells. Monitoring wells and leachate collection and treatment are required on an individual site basis as needed.

B. Enforcement Procedures

The State Solid Waste Management Law provides the Department with two methods of judicial remedy - injunctive relief and a misdemeanor charge for violation of the law or regulations. The Department has the authority to issue orders for correction of violations of the law or regulations. To date, court action has not been instituted for violation of the law or any regulations. However, investigative reports and department orders have been issued to obtain correction of violations and closure of open dumps. Approximately 120 open dumps have closed through voluntary action and education efforts during the past year.

C. Source Reduction and Resource Recovery

The Missouri Solid Waste Management Program has provided technical assistance to regional planning commissions, counties and cities to help them develop and implement efficient and sanitary solid waste management systems, including resource recovery. Sixteen of the state's 20 regional planning commissions have developed a solid waste management plan. One regional plan provides for implementation of a regional energy recovery system within five years. Several of the larger cities have under active study the use of solid waste for energy recovery.

Regional solid waste authorities are not specifically provided for in State Statutes, however, cities and counties have in at least six areas formed a not-for-profit corporation to cooperatively operate or contract for solid waste collection and/or disposal services.

The State Environmental Improvement Authority has issued tax-free bonds to partially fund the construction of a 70 million dollar regional solid waste energy recovery system to be owned and operated by a private utility company. Other than the State Environmental Improvement Authority, the state has no solid waste funding available to local government or private industry. To date the Authority's bonds are of no advantage to local government because they can issue their own tax-free bonds.

The St. Louis City - Union Electric Company energy recovery demonstration project supported by E.P.A. is the only major resource recovery project in the state. One city (approximately 47,000 population) operates a separate collection system for newspapers.

Various types of beverage container legislation have been soundly defeated by the legislature during the past three years.

D. Hazardous Waste Management

The Missouri Solid Waste Law and Regulations require that a land disposal site must have an operating permit with specific provision in the engineering design plans in order to legally accept and dispose of hazardous and toxic waste. There are no controls on the generation and transport of hazardous waste. The Division of Environmental Quality does operate a "pollution spill" program related primarily to water pollution control.

A state hazardous waste survey is scheduled for implementation during this fiscal year as soon as qualified personnel can be employed.

E. Public Affairs

The Solid Waste Management Program recently completed a two year solid waste training project funded by an E.P.A. grant. Forty-three training courses were conducted with a total of 1697 persons attending. The staff routinely makes solid waste presentations before organizational groups and local government officials to promote improvement in solid waste management. Slide presentations and informational materials, such as dump closing procedures, model ordinances, model contracts for collection service, and planning guidelines, have been developed and used throughout the state. The training courses and technical information provided by the state have assisted 75 cities during the past year to upgrade their residential collection service. There are now 165 cities in the state that have adequate solid waste ordinances and provide collection service to all households by contract or municipal operation.

F. Critical Areas for Federal Assistance

The following are the areas where O.S.W.M.P. could best assist solid waste management in Missouri:

1. Public information efforts should be directed toward the inefficiency that exists in most solid waste management systems. This problem could be related to the energy and economic problems our country faces. Emphasize the fact that we have the technology to environmentally dispose of solid waste rather than trying to scare the public with the horrors of leachate.

2. Expand the existing technical assistance program so that each regional office has expertise in the major areas of collection, disposal, resource recovery and hazardous waste. The hazardous waste research efforts need to be advanced as rapidly as possible.

3. Any funding considerations by the federal government should be limited to research, demonstration of new technology, state program support and low interest loans for resource and energy recovery projects and regional or area-wide solid waste management systems.

MONTANA DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES
Environmental Sciences Division
Solid Waste Management Bureau
Helena, Montana 59601

EPA-NSWMA CONFERENCE
San Francisco, November 14-15, 1974

MONTANA'S SOLID WASTE MANAGEMENT PROGRAM

Montana has made great strides in solid waste management in recent years. The major part of the state's population is now served by proper landfill disposal operations; a statewide junk vehicle disposal program is removing these unsightly relics from the landscape, with recycling of the scrap metal; and a program is now being implemented for the safe land disposal of hazardous wastes. Future endeavors should include greater efforts in source reduction and resource recovery in the state. The Solid Waste Management Bureau is encouraging legislation for funding a feasibility study in the next year to determine the relative merits of various resource recovery plans and their applicability to our state.

A. *LAND DISPOSAL OF SOLID WASTE*

Design Criteria and State Review Procedures

In 1967 the sanitary landfill program began when an initial survey was undertaken to determine the status of solid waste practices in the state of Montana. The Montana Legislature passed basic legislation on solid waste management in 1965. This was amended in 1969; additional legislation enacted in 1969 (*Refuse Disposal District Law*) made it possible for a county or counties, or a portion of one or more counties, to work together to develop refuse disposal plans.

The Solid Waste Management Bureau provides technical assistance to responsible officials in county and city government in the development of land disposal sites. Training programs are provided to equipment operators and landfill supervisors. Any new landfill must have Bureau approval of the site location before the county can issue a permit for its operation. Bureau approval is dependent on the results of required analyses, including soil analysis, depth to normal groundwater, historical high for groundwater, groundwater quality data, path of groundwater flow, and location of all public or private wells within 1,000 feet of the proposed site. Soils characteristics include soil composition, depth to bedrock, maximum elevation or depth of groundwater saturation, and complete data on permeability.

Rule 16-2.14(2)-S14100, Refuse Disposal Areas, was adopted May 24, 1974. The purpose of the rule was to set forth sanitary standards for refuse disposal areas and waste management. The rule sets forth waste classifications, site classifications, specifications for waste disposal sites, site selection, operation and maintenance and permit requirements. The wastes and sites are classified Class I, II, and III, with Group I wastes being the most hazardous set by the Environmental Protection Agency, and the Group III the most inert and least hazardous solid wastes. A Class I site may accept all types of wastes *(I, II, or III)*, while a Class II can accept Group II and III wastes, and a Class III site may accept only Group III wastes. At this time new landfill sites are being classified according to this system. Class I designation requires a complete in-depth soil analysis conducted by an expert *(geologist, hydrologist, etc.)*, usually from the State Soil Conservation Service.

Waste Water Treatment Plants, Animal Feedlot Waste, Septic Tank Pumpings

Current legislation, policy and program criteria that pertain to municipal waste treatment plants, animal feedlot wastes, and septic tank pumpings are administered by the Water Quality Bureau of the State Department of Health and Environmental Sciences, in cooperation with the Solid Waste Management Bureau. Many Montana communities have lagoons, with no resultant sludge disposal problems, while others use primary and secondary clarifiers followed by digestion, thickening, dewatering, heat treatment, and disposal of the dried remains in a sanitary landfill.

Animal feedlot waste is being controlled statewide under the state water pollution laws and rules. The Solid Waste Management Bureau works diligently with the Water Quality Bureau to maintain proper disposal of these wastes.

Septic tank pumpings are a major concern in many communities. The Environmental Services Bureau, in cooperation with the Solid Waste Management Bureau, administers the law. Local health officers review all septic tank pumpers' qualifications before licensing occurs,and are responsible for enforcement of the legal requirements. Primary disposal of septic tank waste is into sanitary sewers; if this method cannot be used, the wastes must be dumped at designated areas for drying, or disposed of in designated pits at approved landfill sites.

Land Disposal Facilities Summary

Since 1970 when there were only ten acceptable landfill operations in the state of Montana, we have progressed to 65 approved operations to date. However, 64 sites still exist which are not acceptable, due to open burning of refuse in the dump site. These are mostly in the smaller communities.

Leachate is not a chronic problem in Montana, as it is in states where the annual rainfall is high. We have few dump sites at this time that have water problems; where water problems do occur, they are usually due to high groundwater rather than to water moving down through the waste cells. We have had little need to use well monitoring or leachate collection and treatment.

Approved Land Disposal Facilities Summary

The 65 approved landfill operations serve 77 percent of the state's population. The 64 non-approved disposal operations point out the problems involved in proper refuse disposal in rural Montana. The small communities face considerable economic problems in trying to develop individual community landfill facilities, and the great distances between towns hinder cooperative disposal efforts.

Of the 30 most recently established landfill sites, 90 percent have received approval letters from this office. Few of the presently operating landfills (14%) have had soil evaluations conducted, as the rules requiring this have been in effect only since May of this year.

Thirty solid waste disposal sites are being screened for hazardous waste disposal. Rigid Class I requirements are maintained when selecting these sites. The sites will be under surveillance, as well as rigid operation and maintenance practices. Eventually, we would like to establish one site per county for hazardous waste disposal; however, this may be difficult in low population areas of the state.

Site Capacity Summary

The ultimate capacities of land disposal sites can be estimated by assuming an average refuse depth of 10 feet within landfill trenches and an average refuse density of 1,000 pounds per cubic yard. The following is an approximate breakdown of the ultimate capacities of the state's landfills:

Capacity less than 150,000 tons	*40 sites*
Capacity between 150,000 and 500,000 tons . . .	*20 sites*
Capacity more than 500,000 tons	*5 sites*

Refuse Sites and Land Use Planning

Montana does not have a statewide land use planning program at the present time. The record of city-county planning boards in obtaining and allocating land for solid waste disposal has not been good. The Solid Waste Management Bureau is working to encourage planning entities within the state to include refuse disposal as an important factor in long-range land use planning.

B. ENFORCEMENT PROCEDURES

Solid waste management is regulated by statutes and by rules. If a waste handling facility is violating a statute, the information is turned over to the department legal unit, which in turn files the necessary complaints or injunctions. If a rule is violated, the offending party is notified and given a reasonable period of time to correct the deficiency. The offender then has two choices: (1) ignore the notice and have charges filed against him in court, or (2) appeal to the State Board of Health and Environmental Sciences for a variance from the particular rule involved. The Board can grant the variance or deny it, in which case the offender must either comply or seek relief in court *(same as option 1).*

In the past twelve months, 39 enforcement actions have been taken, all of which involved the statewide junk vehicle program. In each instance, the violation involved a person operating a motor vehicle wrecking facility without the required state license.

C. SOURCE REDUCTION AND RESOURCE RECOVERY

A program for the recovery of scrap metal from junk vehicles is based upon the Junk Vehicle Disposal Law, passed by the 1973 Montana Legislature. The law became effective July 1, 1973. It calls for mandatory action on the part of the county commissioners to establish free vehicle graveyards for the citizens of the county, as well as clean-up of junk vehicles that litter the area.

Also required by the statute are the annual licensing of all motor vehicle wrecking facilities and the shielding of all wrecking facilities from public view. Junk vehicles in non-wrecking yard locations must also be screened from public view. All of these requirements are now being implemented. Private wrecking facilities have a deadline of May 4, 1975 to accomplish the shielding of their facilities.

The total program under this act is making good progress. All 56 counties of the state have established free vehicle graveyards for their citizens, and clean-up operations are in progress. A great deal of action on the part of private motor vehicle wrecking facility operators will be necessary for the shielding requirements to be met by the deadline date.

Regional Solid Waste Management Authorities

Under the 1969 Refuse Disposal District Law, districts can be formed by any number of counties or a portion of a county to handle their solid waste disposal. To date, 17 operations have been established under this authority.

State Funding in Resource Recovery

The Junk Vehicle Disposal Program is financed entirely by user fees collected when a vehicle owner buys his annual license or when he applies for a title for his car or the transfer of a title on a used car. A one dollar fee is levied on the annual license renewal and four dollars on each title transfer. These funds are deposited in the state general fund and earmarked for use in the Junk Vehicle Disposal Program.

A substantial portion of these funds is returned to the county, based upon the number of vehicles registered in the county, to enable the county to run its program as previously described. The funds retained by the state are used for administrative costs and subsidizing the private car crushing firm to flatten and transport the junk vehicles to a processing plant.

At the time this legislation was enacted, the low price of scrap metal made the subsidy payment necessary in order to have the junk vehicles removed. Now, with higher scrap metal prices, the car crushing firms are able to pay the state an amount per ton, based on the distance to the processing plant. The fee schedule comes under annual review by the Legislature, and our feeling is that the fees will be reduced.

Resource Recovery Planning

The above-mentioned law on junk vehicle disposal is being implemented, as indicated, on a cooperative basis.

A staff person of the Solid Waste Management Bureau, with the approval of the Governor's Office, has initiated a collection system whereby all recyclable paper used in state government offices is separated, stored, and sold to paper salvagers. This operation is just getting into gear.

Purchasing Policies Aiding Resource Recovery

The Purchasing Bureau of the State of Montana has made it possible for all state agencies to specify recycled paper in their orders, to the extent that such paper is available. Some agencies have requested the use of recycled paper entirely on some orders, especially for letterhead paper, envelopes and text paper.

Source Reduction and Energy Recovery Programs

Montana presently has no program of source reduction. A bill similar to the Oregon Bottle Bill was introduced, but was defeated by the Montana Legislature in 1973. That bill was not promoted by the state, and was effectively opposed by representatives of the American Brewers Association.

One Montana city has purchased a pulverizer to process its garbage before it is landfilled. Scrap metal is separated and recovered in this operation. They have reported a sale of scrap metal, extracted during a three-month period, for $37,000.

Pending Legislation

Legislation is being prepared to introduce to the 1975 Legislature, which would make state funds available to do limited but adequate studies in portions of the state *(probably on a matching basis with local communities)* to determine the feasibility of the recovery of raw materials and/or energy from the general solid waste stream in the state or any area of the state.

Other Groups Promoting Resource Recovery

A group known as the South Central Montana Development Federation, a federally funded organization involving eleven Montana counties, has done a comparative study to determine the relative costs to those counties with individual county landfill operations, as opposed to cooperative area-wide efforts. This same organization now has a grant application pending to finance a study of the effectiveness of the use of organic portions of solid waste to help reclaim land that has been disrupted by strip mining. The areas in question are in the Colstrip, Montana area.

Private enterprise recycling operations, based upon citizen initiative in delivering recyclable items, such as bottles, newsprint, IBM cards, and steel and aluminum cans, have been set up in seven of the larger Montana cities. We do not have information on the volume of business which these centers have been doing.

D. *HAZARDOUS WASTE MANAGEMENT*

Existing State Hazardous Waste Legislation and Programs

At present, Montana does not have a uniform hazardous waste management act among its statutory codes. Efforts to control hazardous materials and wastes have been directed along the lines of safe transportation, emergency response, and disposal. These responsibilities are divided among different state agencies or may be an inter-agency responsibility in character. For example, the U.S. Department of Transportation and our state counterpart, the Department of Public Service Regulation, regulate the inter- and intra-state transportation of hazardous materials. The Department of Health and Environmental Sciences has for a long time been responsive to hazardous materials problems which sporadically surface in Montana.

The Solid Waste Management Bureau leases a munitions bunker from the Glasgow Air Force Base for the safe storage of hazardous wastes. We have an accumulative 92,000 pounds of dry pesticide chemical waste and 14,000 gallons of liquid pesticide chemical waste stored in the bunker to date. Other hazardous wastes are accepted upon request from citizens and local and state government agencies. Transportation costs are generally incurred by the person requesting disposal. The collection program is a cooperative program among the Montana Department of Fish and Game, the Montana Department of Agriculture, and the Montana Department of Health and Environmental Sciences.

The Solid Waste Management Bureau is currently in the process of securing a parcel of Bureau of Land Management property to serve as a specially designated hazardous waste disposal site for Montana. This site is located in close proximity to the Glasgow Air Force Base hazardous waste storage facility. The site will additionally serve as the scene for a twenty-month $150,000 Environmental Protection Agency contract to demonstrate a statewide collection, transportation, and disposal program for waste pesticides and spent pesticide containers. Special soil biodegradation studies will be conducted at the site, as well as trench landfilling and chemical treatment of highly persistent pesticides and other hazardous wastes. Rules adopted in May 1974 to the Department's solid waste law provide for the classification of landfills as to the type of wastes they accept, based upon soils, hydrologic and geologic criteria. The Solid Waste Management Bureau has established December 31, 1975 as the projected date for completion of landfill classification. Under these rules, certain hazardous waste volumes may be disposed of in Class I sanitary landfills. An application for a permit to dispose of hazardous wastes must be made with the Solid Waste Management Bureau, if an excess of 100 pounds or 50 gallons of active hazardous waste ingredient are to be disposed. The waste material must be disposed of according to the recommendations of the Department, based upon review of the application.

Hazardous Waste Surveys

The Solid Waste Management Bureau is developing a statewide hazardous waste survey to document and assess the effect of hazardous waste handling and disposal on public health and the environment in Montana. This survey will document industries in Montana generating hazardous wastes, the types of wastes they generate, their amounts, and present disposal methods. From this survey will be determined the form and extent of hazardous waste management program needs in Montana and the extent of legislation needed to implement the program. The Bureau is planning to initiate the survey before the first of the year, and it is anticipated that the survey will continue for a period of one year.

E. PUBLIC AFFAIRS

One man is employed for public relations activities for the Solid Waste Management Bureau. The major duties of this position include: educational classes for grade school through college level students, presentations to many different youth groups, programs for service organizations and professional groups, and audio-visual programs and news articles developed and distributed to the news media. Whenever new legislation is being sought, a concerted effort is made to distribute information through many different techniques to the public; when a city or county shows an interest in developing a new solid waste system, the public relations employee, if requested, goes into the local area to help inform the public.

Technical information activities performed by the Solid Waste Management Bureau include: distribution of materials such as laws, rules, educational materials, forms; conducting training sessions; development of alternative solid waste management plans for any city or county requesting same; and field investigations of city and county disposal operations, along with advice on correct operational procedures.

F. CRITICAL AREAS FOR FEDERAL ASSISTANCE

In Montana at this time the greatest need for federal assistance is in the development of suitable solid waste management programs for small communities, along with funding the planning and initial capital outlay for resource recovery systems.

STATE OF NEBRASKA

ACTIVITIES IN SOLID WASTE MANAGEMENT

Reports to the EPA-NSWMA Conference
November 14, 15, 1974
San Francisco, California

A. LAND DISPOSAL OF SOLID WASTE

The existing State legislation and policy requires new land disposal sites to be approved or licensed. A community must submit information to the Department of Environmental Control indicating the location in regard to the flood plain, distance to groundwater table, distance to the nearest domestic or municipal wells, and surface water drainage facilities. These submissions are verified by the planning section of the Solid Waste Division of DEC.

Regarding disposal of sludge from waste water treatment plants, feedlot wastes, and septic tank pumpings, it is the policy to recommend disposal on non-food producing agricultural land. However, it is not required by rules and regulations.

Leachate is not considered to be a major problem in Nebraska, unless the site has been located in the flood plain, in groundwater, or improper surface water drainage has been provided. For the most part, Nebraska's average rainfall is below the evaporation rate. This reduces the leachate problem to minor proportions.

The State has approximately 350 approved and 53 licensed land disposal sites. Nine of the licensed sites are considered sanitary landfills. Seventeen sites in Nebraska are considered acceptable to receive hazardous wastes.

B. ENFORCEMENT PROCEDURES

The Solid Waste Division is required by law to attempt voluntary compliance with the rules and regulations. If voluntary compliance fails, an administrative hearing is held. A hearing officer, after hearing the evidence, renders a decision. This decision may be appealed by either the State or the defendant. Cases may also be filed in district court.

C. SOURCE REDUCTION AND RESOURCE RECOVERY

Nebraska provides only technical assistance to resource recovery projects.

It is the intent of the Solid Waste Division to determine markets, buyer requirements, and provide greater emphasis on recycling and resource recovery during this fiscal year.

The Governor's Council on Keep Nebraska Beautiful and Keep Omaha Beautiful are the major supporters of recycling efforts in the State. Several communities are sponsoring selective recycling projects.

D. HAZARDOUS WASTE MANAGEMENT

The Solid Waste Division has applied for and has been given an EPA grant for a hazardous waste study. This study is now being started and should be concluded in fiscal year 1976.

E. PUBLIC AFFAIRS

One and two day seminars are conducted every two months to provide information to site operators, managers, and public officials. Also, the surveillance and enforcement section provides operational information during each site inspection. Division personnel also appear at public hearings, governmental meetings, and other public gatherings to provide information regarding solid waste management.

F. CRITICAL AREAS FOR FEDERAL ASSISTANCE

Federal legislation should be directed to resource recovery incentives, such as comparable freight rates for recovered materials, allow the reuse of material in original or secondary products, tax writeoffs equal to virgin material uses, and assistance to land disposal in the form of grants or guaranteed loans.

It would be of benefit to Nebraska if demonstration projects would be directed to communities or areas of 20,000 population.

STATE OF NEVADA
BUREAU OF ENVIRONMENTAL HEALTH
SOLID WASTE MANAGEMENT PROGRAM REPORT

A. Land Disposal of Solid Waste

1. State statutes supplemented by the regulations provide for the responsibility and control of solid waste systems. By regulation each proposed disposal site must meet requirements which will prevent or minimize underground and surface water pollution. Due to the arid climate, percolative water is negligible. High ground water areas and areas subject to flooding are prohibited from use as disposal sites.

2. Plans for the processing and disposal of sludge from municipal wastewater treatment plants, animal feedlot wastes, and septic tank pumpings, including the utilization thereof, are required to be submitted and approved by the State's solid waste and water pollution programs. Such disposal plans must meet regulatory requirements preventing water pollution.

3. Nevada has 123 land disposal facilities now in use, none of which are known to have a leachate problem. One hazardous waste site has monitoring wells. There are no leachate collection and treatment facilities.

4. There are 19 land disposal sites that are considered to have State approval. These sites serve 90% of the State's population. There are 4 pesticide container disposal sites and 1 hazardous waste disposal site which are State approved.

5. The ultimate capacities of the disposal sites are unknown. Site availability is not a problem in Nevada.

6. Solid waste management is not a significant factor in the State's land use planning efforts.

B. Enforcement Procedures

State statutes provide for fines to be levied if local entities don't comply with regulations established to control solid waste management. The statutes also provide injunctive relief provisions. Five citations have been issued for open burning dumps.

C. Source Reduction and Resource Recovery

One of the statutory policies of the State concerning solid waste is to conserve natural resources.

1. Regional solid waste management authorities are allowed. Six are recognized and four have completed local plans.
2. No State funding is available for resource recovery.
3. Resource recovery planning is proceeding at both the State and two local levels.
4. There are no State tax laws and purchasing policies that are beneficial to resource recovery efforts.
5. Clark County and private concerns in Washoe County have established resource recovery stations in Las Vegas and Reno. There has been legislative bills introduced recently to require a 5 cent deposit on beverage containers.

D. Hazardous Waste Management

1. Hazardous wastes are governed by the State's solid waste management statutes. Hazardous wastes are included in the definition of solid waste. The Department of Agriculture controls pesticides and the disposal of containers.
2. A survey is presently being conducted to determine the hazardous wastes being generated in the State.

E. Public Affairs

The Bureau provides technical information and planning assistance to local entities in solid waste management.

F. Critical Areas for Federal Assistance

The principle problem that Nevada's rural communities have concerning solid waste management is acquisition of equipment to collect and to dispose of solid waste. These rural communities do not have the population or tax base to be able to purchase such equipment. If surplus equipment and/or grants for purchase and operation thereof were available rural disposal problems would be solved.

(This report was prepared following the suggested state report outline).

STATUS OF SOLID WASTE MANAGEMENT PROGRAM
IN NEW HAMPSHIRE - 1974

A. Land Disposal of Solid Waste

1. New Hampshire laws require every municipality to provide and maintain a sanitary disposal facility for refuse, garbage, manure and putrescible matter. These sites must be approved by the Division of Public Health. The towns must provide initially a backhoe for digging test pits to obtain the potential of the site. If the test pits prove favorable the towns are required to have deep test borings. The reasons for the pits and borings is to determine seasonal high water table and depth to ledge and/or hardpan. New Hampshire has a 6' minimum depth to ground water, 10' to ledge and 100 feet to surface waters. All of these vary with the type of soil present.

2. There are approximately 180 sites now in use in New Hampshire. Only one has a known leachate problem, but many other old sites are believed to have a problem with leachate. We have 3 sites with monitoring wells and more towns are being required to install them to try to obtain information on leachate problems. None of the sites in New Hampshire have leachate collection and treatment facilities.

3. All but one site has a State approval. However, some of these are very old standards and would not meet new criteria. These sites service approximately 60-65 percent of the states population. There are no sites approved specifically for toxic or hazardous wastes.

4. Solid waste management is a factor in land use management and the legislative committee assigned to studying the problem has had several discussions with the solid waste management staff regarding this problem.

B. Enforcement Procedures

Enforcement has been minimal due to the small staff. The usual procedure includes an on-site review, a written order is issued including what must be done to alleviate the problem and by what time it must be accomplished. If the desired corrections are not made, the Division of Public Health can go in and clean up the problem and charge the offender for the costs or in some cases can take the individual to court. The few enforcement actions taken have all been settled out of court.

C. Source Reduction and Resource Recovery

There is no state legislation at this time regarding source reduction and resource recovery. However, legislation will be introduced in the 1975 legislative session to bring these under the control of the Division of Public Health. Also, at present the policy is to encourage any efforts being made in this field. It is hoped that funding might become available in 1975 to encourage source reduction and resource recovery. No funding is available at this time.

Several small towns have initiated recycling projects but only one is in full operation. This is the Town of Nottingham which has mandatory source separation of glass, paper, metal and other. The other is reduced in an incinerator and the residue landfilled.

One group putting a lot of emphasis on recycling is the New Hampshire Cooperative Extension Service. They provide a valuable service to the municipalities with questions regarding recycling to include costs, markets, and condition of material to be shipped.

D. Hazardous Waste Management

At present no specific legislation has been adopted regarding hazardous wastes. However, a survey is expected to be conducted in the near future in conjunction with an industrial waste survey in an attempt to understand what the size of the problem is in New Hampshire.

E. Public Affairs

There is no formal public affairs program as such. However, the existing staff has met with a number of municipal organizations and interested groups explaining the laws, rules and regulations and alternatives to the solid waste problem.

F. Critical Areas for Federal Assistance

The two most important areas where the federal program could assist is with (1) technical assistance especially in the hazardous/toxic waste field and in general solid waste problems and (2) with funding to the state agencies to help them improve their programs. Many of the State programs are small and a realistic approach to solving the problem is almost impossible.

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NEW JERSEY STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF ENVIRONMENTAL QUALITY
BUREAU OF SOLID WASTE MANAGEMENT

NOVEMBER 14 & 15, 1974
SAN FRANCISCO

LAND DISPOSAL OF SOLID WASTE

The design criteria for land disposal of solid waste in the State of New Jersey is based upon a double standard - one standard for new facilities and one for existing facilities. In 1970, the Department of Environmental Protection was charged by statute to register and evaluate all solid waste facilities. Each existing landfill was registered and requested to submit an engineering design. Because of the great number of engineering designs which came into the Department, a considerable delay was encountered in completing the processing of all engineering designs for existing facilities. All new landfills are required to have an "impervious liner" (1×10^{-7} cm/sec, maximum permeability). Dikes with clay cores and/or ditches with impervious liners are required to protect the surface waters. Leachate collection and treatment systems are required. Monitoring wells are required at all new sites with sampling of the ground water to be done both ~~by the~~ landfill operator and the Department of Environmental Protection. Analyses are made for those determinations included in the Potable Water Standards. Separate standards both for old and new landfills are used dependent ~~upon the~~ type of solid ~~and/or~~ liquid waste being disposed. The standard for chemical wastes is more stringent than that for municipal garbage which is more stringent than that for demolition ~~garbage.~~ what .

At the present time, there are a total of 348 solid waste land disposal facilities including a number of compost facilities for the disposal of leaves and tree parts. There are 307 sanitary landfills registered with the Department. Seventeen of these presently have monitoring wells. An additional 78 have been identified as requiring wells. Forty-three landfills are known to have a leachate problem. At the present [illegible] have one sanitary landfill with a leachate collection and treatment facility. [illegible] has produced leachate. All 348 solid waste facilities are registered [illegible] therefore, are operating legally. One hundred seventy-eight of these [illegible] engineering designs completely reviewed. It is estimated that 50 percent [illegible] population is served by facilities which are both registered and have [illegible] designs. There are 14 facilities which are registered to receive hazardous or toxic wastes, 8 of which are land disposal sites. The balance are processing plants. Of the 348 facilities, 240 have an ultimate capacity of less than 150,000 tons. Forty-seven have an ultimate capacity of between 150,000 and 500,000 tons, and 61 facilities have an ultimate capacity of more than 500,000 tons.

Solid waste management presently is not a significant factor in State land use planning. However, because of the Wetlands Act and the Coastal Area Facilities Review Act (CAFRA) ~~statutes, solid waste may not be deposited in a considerable~~ area of New Jersey, hence, for future siting, solid waste management must consider these prohibited areas.

ENFORCEMENT PROCEDURES

A Notice of Prosecution, a Departmental Order, or Registration Revocation or Suspension are the administrative enforcement actions available to the Bureau of Solid Waste Management. The Notice of Prosecution indicates that a violation of the Bureau's regulations has occurred. The Notice of Prosecution constitutes an offer by the Department to compromise its claim for the maximum penalties ($1,000 per day for each violation) through payment of the specified settlement sum. The settlement sum is predetermined by a Penalty and Rebate Guide found in the Administrative Procedures of the Bureau. Should the settlement sum not be paid, the matter is referred to the Office of the Attorney General for prosecution. A Departmental Order also indicates that a violation of the Bureau's regulations has occurred and orders correction of the violation within a reasonable period of time. Revocation or suspension of registration can occur when the registrant has: (a) violated any provision of the Solid Waste Management Act of 1970 or any rule, regulation, or administrative order promulgated under that Act; (b) violated any provision of any laws related to pollution of the waters, air and/or surfaces of the State; (c) refused or failed to comply with any lawful order of the Department. A notice of intent to revoke is issued and a hearing must be held prior to the actual revocation or suspension of registration. In most cases, a compromise is reached prior to the revocation or suspension.

The Commissioner of the Department of Environmental Protection may institute an action or proceeding in the Superior Court for injunctive and other relief, including the appointment of a receiver for any solid waste disposal operation, which is established or operated in violation of the Solid Waste Management Act, or any code, rule or regulation promulgated pursuant to the Solid Waste Management Act.

In the past year, the Bureau has issued 97 Notices of Prosecution, 48 Departmental Orders and 22 Notices of Intents to Revoke Registration. The Bureau has also collected $59,295 in penalties and initiated 3 court action in the past year.

SOURCE REDUCTION AND RESOURCE RECOVERY

Counties themselves, incinerator authorities, solid waste authorities and a number of other regional governmental and quasi governmental agencies are allowed by law to provide regional solutions to the solid waste problem. Thus far, two solid waste authorities and two regional improvement authorities have been active in the solid waste field in New Jersey. At the present time, there is no State funding available for resource recovery, and resource recovery planning is now just beginning in the State. There are no State tax laws or purchasing policies that may be beneficial to resource recovery at present, but tax incentives and disincentives and changes in purchasing policies are now undergoing serious consideration. Most communities in New Jersey have, either through the local government, or through the community service organizations made "recycling centers" available to their citizens. Separate collection, by the municipality, of certain recyclables is available in some 20 New Jersey municipalities. The City of Long Branch, for example, pays its citizens for the return of recyclables to the City's recycling center.

Major legislation is now pending which would provide for regional planning and mandate conformance with adopted plans within a tight time-frame. Other bills pending include legislation providing for local recycling grants, several "bottle bills", mandatory source separation of specific recyclables, etc. Both the legislature and the administration are studying alternative approaches to statewide resource recovery and major legislation is expected before the end of the year.

HAZARDOUS WASTE MANAGEMENT

On July 1, 1974, the Department of Environmental Protection promulgated new rules and regulations governing, among other things, the collection, haulage and disposal of hazardous wastes. These new rules and regulations place the responsibility for the hazardous wastes upon the generator or owner, the collector/hauler and the disposal facility operator. It specifies a communication between all three parties and the Department of Environmental Protection as to the quantity and special handling required to assure safe transportation and disposal. The generator is responsible to furnish the Bureau of Solid Waste Management with a list of all such waste disposed of within the State, the method of handling, the carriers and the consignee. The solid waste facility operator must furnish information as to the quantity and type of hazardous waste received, the method of disposal and the location where disposed or stored which must be exact enough to permit recovery of the material if so desired. Beginning on March 15, 1975, no solid waste facility shall accept or receive for disposal on or in the lands of New Jersey any hazardous waste or bulk liquid unless such facility has installed a facility for the interception, collection and treatment of all leachate generated at the facility. Monitoring wells are also required.

PUBLIC AFFAIRS

The Department, through the use of conferences, talks and other types of meetings conducts public affairs and technical information activities. The Department, through its Public Information Office, publishes from time to time articles of interest to those concerned with solid waste management. All files and records of the Bureau of Solid Waste Management are open to the public for inspection upon request. The Bureau of Solid Waste Management's Technical Services Section meets with landfill operators and their engineers as well as municipal government and county officials and renders technical assistance through these means.

CRITICAL AREAS FOR FEDERAL ASSISTANCE

The following 8 activities by the Office of Solid Waste Management Programs would be very desirable for the State of New Jersey.

1. Establish standards for the disposal facilities for chemical and hazardous
2. Develop treatment and processing systems for chemical and hazardous wastes.
3. Establish and develop processes for the treatment of leachate from landfills.
4. Establish standards for leachate to determine when it needs treatment and when it can be discharged into streams, sewage plants or others.
5. ~~Financial assistance for leachate treatment facilities.~~
6. Federal law requiring solid waste recycling and resource and energy recovery.
7. Set up funding mechanism, similar to Highway Funding, for recycling and resource and energy recovery facilities.
8. Establish and develop processes and standards for recycling and resource and energy recovery.

P.E.R.A. Building - Room 517
STATE OF NEW MEXICO
P. O. Box 2348, Santa Fe, New Mexico 87503
Environmental
Improvement
Agency

November 5, 1974

SOLID WASTE MANAGEMENT

New Mexico, 1974

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SOLID WASTE SECTION

ENVIRONMENTAL IMPROVEMENT AGENCY

A. LAND DISPOSAL OF SOLID WASTE

On April 19, 1974, the New Mexico Environmental Improvement Board, as allowed by the New Mexico Environmental Improvement Act, adopted statewide Solid Waste Management Regulations. Both the regulation and the act are attached to and are part of this report.

The New Mexico Solid Waste Management Regulations cover the four broad areas of solid waste management, that being, storage, collection, transportation, and disposal.

All land disposal sites, as prescribed in the regulation, will be registered with the New Mexico Environmental Improvement Agency by December 19, 1974.

Leachate has not been, and it is not predicted that it will be a problem in New Mexico. This is due to the low annual rain fall in New Mexico and the great distance to water tables. The majority of landfill sites in New Mexico are located in areas where it is at least 100 feet or more to the ground water table.

B. ENFORCEMENT PROCEDURES

As stated in Section A. the statewide regulations were adopted in April of 1974. It will be noted in reading the regulations that July 1, 1975, is the cut off date for compliance. Therefore, enforcement actions have not taken place in the past twelve months, but a great deal of effort has been spent in working with the counties and communities in New Mexico in preparing for the implementation dates.

C. SOURCE REDUCTION AND RESOURCE RECOVERY

At this time there are no resource recovery authorities in New Mexico. However, such authorities would not be discouraged. Also at this time, there is no state funding available for local government in this area.

However, a great deal of interest has been expressed in this area and it is anticipated that legislation will be introduced in the next legislative session pertaining to this topic.

D. HAZARDOUS WASTE MANAGEMENT

There is presently no specific act or regulation that deals solely with hazardous waste management. However, when reviewing State Environmental Regulations in total, it is found that Air Pollution Regulations, Water and Liquid Waste Regulations and Solid Waste Regulations do deal with many toxic or hazardous components. The New Mexico Environmental Improvement Agency's Toxic Chemicals Section is prepared to write such a regulation, if it is required by federal mandate.

E. PUBLIC AFFAIRS

The Solid Waste Section of the New Mexico Environmental Improvement Agency has an extensive statewide Solid Waste Training Program, which devotes a great deal of time to public education and public relations. Members of the section are actively working with public and private interested groups. The section provides technical assistance upon request on a statewide basis.

F. CRITICAL AREAS FOR FEDERAL ASSISTANCE

New Mexico has repeatedly informed EPA of the need for construction grants. Since New Mexico is approximately 60% Federal land, it has been extremely difficult for many of our communities and counties to fund adequate Solid Waste Management Programs without financial assistance.

We feel that the Federal Government should continue to strongly support and fund State Solid Waste Management Training Programs.

New Mexico would support technical assistance from EPA provided however that assistance is competent and available when needed.

New Mexico also suggests that EPA strongly consider the differences that exist throughout the United States when developing Solid Waste Regulations or guidelines. New Mexico, which is the fifth largest state in the nation, and yet only has a population of approximately one million, certainly does not have the same solid waste management problems as New York or New Jersey. New Mexico strongly urges that EPA consult with Solid Waste Management personnel in our state before further EPA hazardous waste disposal recommendations are made, which would, or could, affect the state. It was noted in reading EPA's hazardous waste proposal to Congress, that New Mexico was chosen as one of the locations for hazardous waste storage and treatment sites. To our knowledge no one within New Mexico Environmental Improvement Agency, and particularly the Solid Waste Management Section, had been contacted prior to EPA's report.

New Mexico would oppose any EPA Regulation that would place hazardous waste disposal sites in states primarily because a state has a large land mass and is sparsely populated. New Mexico, which is not a large producer of hazardous waste, would not want to become a dump ground for other area's hazardous waste just because of the availability of land. We would suggest to EPA that storage and treatment facilities be located as closely as possible to the point of generation of hazardous waste.

STATE SOLID WASTE MANAGEMENT PROGRAM STATUS

NEW YORK STATE

November 1, 1974

PROGRAM OBJECTIVES

New York State has maintained a broad solid waste management program effort for the past ten years. The program is oriented toward the following objectives:

1) Achieve and maintain effective disposal of all solid wastes.

2) Achieve and maintain efficient management of all solid wastes.

3) Achieve optimum utilization of resources through recovery, recycling and reuse techniques and applicable source reduction methods.

Appraisal of the effectiveness of New York's solid waste management program is best accomplished through evaluation of program activities and accomplishments as related to each of the three major objectives of the program. In such an evaluation, it should be recognized that although substantially complete accomplishment of the three objectives will probably be in sequential order, the activities related to all objectives are being conducted concurrently.

FIRST GOAL - EFFECTIVE DISPOSAL

There has been significant long-term accomplishment; more than 50 percent reduction in the number of refuse disposal areas in the State since 1964. Almost 1700 open dumps were in existence at the time that State Sanitary Code Regulations became effective in 1963. Currently there are approximately 800 disposal sites and 53 percent are in full compliance with existing State regulations.

The enforcement posture of DEC has been strengthened with the enactment of Chapter 399 of the Laws of 1973. Until this legislation was passed, regulatory control was primarily limited to refuse disposal areas. A new legal base is now in existence for regulatory control of all solid waste management facilities, effective September 1, 1973. This enabling legislation authorizes DEC to:

Promulgate regulations governing the construction and operation of all solid waste management facilities.

Provide technical assistance to municipalities.

Cooperate with local, state, interstate and federal agencies to improve solid waste management practices.

Rules and regulations to administer the new Solid Waste Management Act are now being finalized; a dual permit system will be initiated and an operator certification program will be established.

An innovative approach to enforcement of State regulations has been taken through the use of Conservation Officers for making routine inspections of refuse disposal areas. Conservation Officers have State Police powers and the periodic appearance of uniformed officers at refuse disposal facilities has a cathartic effect on the improvement of substandard operations. Although full use of the Conservation Officers has not yet been extended to all nine regions of the State, experience thus far indicates that the benefits are appreciable. Coordination of Conservation Officer activities and solid waste program staff activities is of great importance, since periodic engineering evaluation of every refuse disposal facility is vital.

A program to register septic tank cleaners and industrial waste collectors became operative in 1972 and approximately 800 operators are now registered. There has been a marked reduction in unauthorized dumping of collected wastes and more aggressive enforcement is now being undertaken. Use of Conservation Officers is also paying dividends in this portion of the program.

SECOND GOAL - EFFICIENT MANAGEMENT

The main focus of this goal is the development of local and regional solid waste management systems that operate efficiently and economically. The State program has provided substantial assistance in overcoming planning inadequacies of the past. Comprehensive planning studies financed by the State since 1966 have established a framework for local decisions and action to consolidate service facilities that can achieve economies of scale at the same time that operations are upgraded to a higher performance level. Since 1966, 36 counties and the City of New York have received assistance under this program. The total cost of these projects is $3.56 million, including $530,000 federal funds, and coverage is 92 percent of the State's population. Comprehensive planning studies initiated at local expense have been conducted in 14 additional counties; nine of these counties received federal financial assistance for the planning projects. No comprehensive planning activity has been conducted yet in seven rural counties, but studies will be initiated soon.

Comprehensive planning projects initiated prior to 1971 focused primarily upon the development of economical disposal systems. With recognition of resource recovery as an emerging technology, the scope of planning projects funded since 1971 has been expanded to explore the potential of recovering resources from solid wastes generated within each new study area. Previously completed studies are being updated to reflect resource recovery potential.

The effectiveness of any planning assistance program must be measured in terms of implementation. It should be recognized, however, that implementation is fostered by an effective environment program, by financial assistance to help meet the cost of improvements, and by developing an atmosphere of support in the public and local government sectors. These three elements were somewhat limited until 1973. Despite these limitations there has been noticeable progress. At the beginning of this year 71 multi-municipal disposal facilities were operating in the State, serving 392 municipalities (26 percent of all cities, towns and villages in the State). Projects being actively pursued now in 18 areas of the State include more than 400 additional municipalities. When these new facilities become operational, 53 percent of the municipalities will be served by intergovernmental systems.

An essential element in the establishment of efficient management systems is the development of operator skills so that facilities can function at satisfactory performance levels. Solid waste training activities have been conducted in New York State since 1964, but the level of activities increased considerably in 1969. The award of a training grant from OSWMP in 1971 allowed even more expanded coverage. During the last year, 12 training courses were presented and 456 operators and local officials became better equipped with the technical background necessary for proper utilization of equipment and facilities. Training activities during the past two years have covered sanitary landfill design and operation, incineration and resource recovery.

THIRD GOAL - OPTIMUM UTILIZATION OF RESOURCES

The emphasis of this goal is on the recovery and reuse of resources now wasted and the reduction of quantities of wastes generated. Until 1972, activities had been limited primarily to the promotion of resource recovery practices and the evaluation of new technology. Two factors have had significant impact on stimulating substantial progress toward this objective: staff expansion to focus solely on resource recovery and implementation of New York's Environmental Quality Bond Act.

The Bureau of Solid Waste Management has been reorganized into a new Division of Solid Waste Management. The Division now consists of two bureaus: The Bureau of Facility Design and Operation, and the Bureau of Resource Recovery. Most of the previous functions of the solid waste program are carried out by the Bureau of Facility Design and Operation. The new Bureau of Resource Recovery consists of two sections. The first of these, the Resource Recovery Technology Section has the following functional responsibilities:

1) Evaluation of systems and equipment for recovery of resources from solid waste.

2) Monitor performance of demonstration systems.

3) Technical assistance to local government in facility selection or operation.

4) Administration of construction grant program authorized by the Environmental Quality Bond Act of 1972.

5) Review and approval of plans for new or modified facilities.

Recognizing the importance of economics and markets for recovered or converted resources, a Market Analysis and Development Section has also been established. This new unit has the following functional responsibilities:

1) Conduct studies to determine market potentials for recovered or converted resources.

2) Promote and develop new markets for recovered resources.

3) Coordinate resource recovery efforts with industry.

4) Monitor existing resource recovery practices.

5) Evaluate and propose incentives & legislation to enhance recovery of resources.

6) Promote resource recovery and recycling practices in governmental agencies.

In 1972, the New York State Legislature authorized a $1.15 billion bond issue for environmental improvements in the State. The Bond Act provides $175 million for solid waste management projects. Construction grants are authorized to be made to municipal corporations for up to 50 percent of the cost of resource recovery projects and up to 25 percent of the cost of equipment for disposal projects. The Bond Act received widespread public support and was favored in a statewide referendum by a margin of greater than two to one.

The Legislature has allocated $3,500,000 of the $175 million for solid waste disposal projects, of which approximately $1.8 million has already been spent. These monies are serving as a catalyst to foster regionalization of solid waste management programs. This is resulting in the elimination of many substandard and inefficient disposal areas and in the creation of larger, consolidated disposal facilities which can be incorporated into resource recovery systems in the future.

The major thrust of the solid waste management portion of the Environmental Quality Bond Act, however, is directed toward the establishment of operative resource recovery facilities. Funds totaling $107,683,000 have already been appropriated by the State Legislature to implement 17 municipal resource recovery projects. With these funds the State is helping the municipalities to achieve a smooth conversion to a new technological and institutional approach to solid waste management.

One area where the Division of Solid Waste Management has made progress during the past two years is the return of completed disposal areas to productive use. The Division's landscape architect worked with 31 municipalities to develop ultimate use plans for completed disposal sites. This is an important activity since most of the 800 existing refuse disposal areas were initiated with little consideration for site use after termination of disposal operations. Several hundred sites phased out during the past several years are currently unused, serving only to remind the public of past inadequacies. Elimination of these scars on the landscape will not only restore unused areas to productive municipal use, but will begin to place emphasis upon the positive aspects of environmentally sound disposal practices.

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Solid Waste Management Projects Summary

LOCATION C—City V—Village T—Town	COMPREHENSIVE PLANNING STATUS	ENVIRONMENTAL QUALITY BOND ACT RESOURCE RECOVERY AND DISPOSAL IMPROVEMENT Projects (1)	Capacity (tons-year)	State Aid Share
Albany County	Update Completed - 1974			
Albany (C)		Regional Resource Recovery System - material recovery and fuel preparation	100,000 (RR)	$ 2,942,000 (RR)
Allegany County	Completed - 1973	County-wide Management System	42,000 (D)	117,125 (D)
Broome County	Completed - 1967			
Cattaraugus County	Completed - 1969	County-wide Management System	87,500 (D)	76,000 (D)
Cayuga County	Update - underway			
Auburn (C)		Regional Management System - ferrous metal recovery	60,000 (RR) 32,000 (D)	400,000 (RR) 14,250 (D)
Chautauqua County	Completed - 1971	County-wide Management System - ferrous metal recovery and fuel preparation	180,000 (RR) 202,000 (D)	4,670,000 (RR) 80,750 (D)
Chemung County	Completed - 1970	County-wide Management System - ferrous metal recovery *	90,000 (RR)	2,000,000 (RR)
Chenango County	Completed - 1971			
Clinton County	None			
Columbia County	Completed - 1974	County-wide Management System - with materials recovery	45,000 (RR)	150,000 (RR)
Cortland County	Update - underway	County-wide Management System - ferrous metal recovery	42,000 (RR)	270,000 (RR)
Delaware County	Completed - 1974	County-wide Management System	40,000 (D)	126,250 (D)
Dutchess County	Completed - 1972			
Poughkeepsie Area		Regional Management System - fuel gas recovery	150,000 (RR)	4,772,000 (RR)
Erie County	Completed - 1972			
Essex County	None			
North Elba (T), Saranac Lake (V), (Also serving Franklin County)		Regional Management System	7,700 (D)	15,500 (D)
Franklin County	Completed - 1974			
Fulton County	Completed - 1971			
Genesee County	Completed - 1974			
Greene County	None			
Hamilton County	None			
Herkimer County	Completed - 1969			
Little Falls (C)		Regional Management System	11,000 (D)	4,250 (D)
Webb (T)		Disposal System	6,000 (D)	17,250 (D)
Jefferson County	Completed - 1972			
Lewis County	Completed - 1974			
Livingston County	Completed - 1974			
Madison County	Completed - 1971	County-wide Management System	45,270 (D)	117,000 (D)
Monroe County	Updated - 1973	County-wide Management System - materials recovery and fuel preparation	600,000 (RR)	9,000,000 (RR)
Montgomery County	Completed - 1971	County-wide management System	45,000 (D)	67,857 (D)
Nassau County	Completed - 1971			
Hempstead (T)		Regional Management System - materials and energy recovery	800,000 (RR)	18,000,000 (RR)
North Hempstead (T)		Regional Management System - ferrous metals recovery	150,000 (RR) 280,000 (D)	4,000,000 (RR) 136,200 (D)
Oyster Bay (T)		Regional Management System - ferrous metals recovery and leaf composting	90,000 (RR) 234,000 (D)	875,000 (RR) 401,000 (D)
Garden City (V)		Leaf Composting Program	3,000 (D)	16,000 (D)
Niagara County	Completed - 1972	County-wide Management System	114,400 (D)	257,500 (D)
Oneida County	Update - underway			
Southwest Oneida SWD		Regional Management System	30,000 (D)	25,815 (D)
Onondaga County	Completed - 1971	Regional Management System - ferrous metals recovery	380,000 (RR) 182,000 (D)	2,050,000 (RR) 1,108,111 (D)

(1) Many other communities in New York State have joined together in multi-municipal systems as a result of recommendations from comprehensive planning studies. Those listed are only a partial listing reflecting applications for funding of projects under the Environmental Quality Bond Act.

(D) Disposal Projects

(RR) Resource Recovery Projects

** Began operation 12-73 — additional recovery being installed*

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Solid Waste Management Projects Summary

Continued from page 65

LOCATION C — City V — Village T — Town	COMPREHENSIVE PLANNING STATUS	ENVIRONMENTAL QUALITY BOND ACT RESOURCE RECOVERY AND DISPOSAL IMPROVEMENT Projects (1)	Capacity (tons-year)		State Aid Share	
Ontario County	Completed - 1974	County-wide Management System	32,400	(D)	22,500	(D)
Orange County	Completed - 1971	County-wide Management System	78,000	(D)	124,000	(D)
Orleans County	Completed - 1974					
Oswego County	Completed - 1971	County-wide Management System	80,000	(D)	104,730	(D)
Otsego County Richfield (T)	Underway	Regional Management System	3,500	(D)	9,900	(D)
Putnam County	Completed - 1966					
Rensselaer County Troy (C)	Update Completed - 1974	Disposal System	40,800	(D)	46,800	(D)
Rockland County	Completed - 1973					
St. Lawrence County	Completed - 1974					
Saratoga County	Update Completed - 1974					
Schenectady County Niskayuna (T)	Update Completed - 1974	Disposal System	80,000	(D)	30,780	(D)
Schoharie County Cobleskill (T)	None	Regional Management System	4,000	(D)	10,000	(D)
Schuyler County	None					
Seneca County	Completed - 1974					
Steuben County Bath (T)	Completed - 1973	Disposal System	7,000	(D)	10,357	(D)
Suffolk County Brookhaven (T)	Completed - 1969	Regional Management System	312,000	(D)	316,000	(D)
East Hampton (T)		Regional Management System	36,300	(D)	30,300	(D)
Huntington-Islip-Babylon (T's)		Regional Management System energy recovery	900,000	(RR)	30,000,000	(RR)
Islip (T)		Interim Disposal System	200,000	(D)	72,000	(D)
Riverhead (T)		Regional Management System	30,000	(D)	22,500	(D)
Smithtown (T)		Regional Management System materials recovery	130,000 30,000	(RR) (D)	1,000,000 31,200	(RR) (D)
Southampton (T) *		Regional Management System	60,000	(D)	23,700	(D)
Sullivan County	Completed - 1974					
Tioga County	None					
Tompkins County	Update - underway	County-wide Management System	40,000	(D)	14,000	(D)
Ulster County Wawarsing (T)	Completed - 1970	Disposal System	18,000	(D)	17,900	(D)
Warren County	Completed - 1971					
Washington County Granville (V)	Completed - 1971	Disposal System	5,000	(D)	7,825	(D)
Wayne County Arcadia (T)	Update Completed - 1974	Disposal System	16,000	(D)	27,000	(D)
Galen (T)		Regional Management System	7,000	(D)	13,000	(D)
Williamson (T)		Disposal System	44,000	(D)	14,730	(D)
Westchester County	Update Completed - 1974	County-wide Management System materials and energy recovery	1,040,000	(RR)	6,000,000	(RR)
Mount Vernon (C)		Fuel Gas Recovery	75,000	(RR)	. 2,000,000	(RR)
Wyoming County	Study Proposed					
Yates County	Completed - 1974	County-wide Management System	20,000	(D)	23,613	(D)
New York City	Part I - Completed - 1969 Part II - Completed - 1972	Metals Recovery and Fuel Preparation - 2 projects	1,800,000	(RR)	21,000,000	(RR)

(1) *Many other communities in New York State have joined together in multi-municipal systems as a result of recommendations from comprehensive planning studies. Those listed are only a partial listing reflecting applications for funding of projects under the Environmental Quality Bond Act.*

(D) *Disposal Projects*

(RR) *Resource Recovery Projects*

* *Began operation 12-73 — additional recovery being installed*

North Carolina Solid Waste Management Program
As Described by Suggested Format

A. Land Disposal of Solid Waste

1. Each site proposed for a sanitary landfill operation is visited and given a preliminary above ground check for pros and cons of a probable operation. This preliminary investigation is performed by field personnel who are the same personnel who will be inspecting the operations on that site upon implementation. North Carolina presently has seven of these persons working on a regional basis.

   Where sites are proposed on marginal or questionable land, these sites are turned down without further investigation. Sites receiving a favorable preliminary review are required to provide aerial photos or maps showing the topography and land use of the site surroundings for at least one-fourth mile. Soil types and the presence of water and/or rock are required to be identified in the zone ten feet below the proposed excavations and at the site's lowest elevation. The location of the borings or probes for representative samples is determined and agreed upon at the time of the preliminary investigation. Upon receipt of the subsurface information provided by the borings, a determination of a suitable separation distance between solid waste deposits and the site's ground water table is made. Thus separation is the primary mode of ground water protection. Also during the review process, site information is forwarded to the Department of Natural and Economic Resources' Ground Water and Surface Water Quality Divisions for comments.

   The operational plans for new sanitary landfill sites are required to show proposed fill heights, finished and intermediate contours, access road location and resulting surface water drainage patterns. Locating landfills in flood plains is prohibited. Pushing waste into drainageways is prohibited and this requirement is usually satisfied by a combination of buffer zone and landfill diking. Diking material, most always earth, provides added protection to the streams and a suitable medium for establishing landfill vegetation for erosion control.

2. The processing and disposal of municipal sludges are not a part of North Carolina's Solid Waste Program. On isolated occasions sludges from drying beds have been permitted on completed landfill areas as a soil conditioner. The rate of application was commensurate with natural fertilizer requirements for vegetative growth. Sludges and slurries are prohibited on approved sanitary landfill sites and their disposition is the responsibility of the N. C. Department of Natural and Economic Resources.

3. North Carolina now has 169 solid waste land disposal facilities in use. Broken down categorically, there are 98 approved sites under county jurisdiction; 38 approved sites under municipal jurisdiction; 11 approved sites for individual industries, usually on their own property; and 22 sites operating under county or municipal jurisdiction and in the process of updating plans and procedures for compliance.

Leachate is not a recurring problem at these sites. Leachate control is one of the violations checked during the site inspection and corrective steps are required immediately when found to be a problem. Seven sites have monitoring wells. There are no land disposal sites in North Carolina with leachate collection and treatment facilities.

4. One hundred thirty-six sites are approved to receive conventional solid waste. Eleven individual sites are approved to receive industrial solid waste. There are no approved sites for hazardous/toxic waste disposal.

5. Ultimate capacity:

   Less than 150,000 tons: 79
   Between 150,000 and 500,000 tons: 44
   More than 500,000 tons: 13

   Acreage of 22 sites in upgrading status not available for above computation.

6. Solid Waste Management is usually included in overall land use planning meetings and documents, but is not a significant factor due to its adaptability to existing land classifications and zoning requirements.

B. Enforcement procedures

The enforcement of the Division of Health Services "Rules and Regulations Providing Standards for Solid Waste Disposal" is carried out by personnel of the Solid Waste & Vector Control Branch of the Division of Health Services, Department of Human Resources.

All approved solid waste disposal sites are inspected at least quarterly. An inspection sheet designed after the requirements of Section XI, Operational Requirements for a Sanitary Landfill, Division of Health Services "Rules and Regulations Providing Standards for Solid Waste Disposal" is used. A copy of each inspection report is provided the operational agency and violations are recorded on a visible file card system in the central office in Raleigh. If a site continues to violate the same items, a meeting is held with the operational agency to seek compliance. If compliance cannot be secured, then after due notice the records are placed with the Attorney General's office for appropriate action. The General Statutes of North Carolina provide a fine or an injunction for relief. During the past 12 months, the records on five different sites have been turned over to the Attorney General and after conferences with the operational agency, the Attorney General and this office, compliance was secured in all but one site and action is now pending in the courts on that site.

C. Source Reduction and Resource Recovery

1. Resource Recovery is being studied and investigated by a Resource Recovery Study Commission. The Commission consists of persons appointed

by the N. C. General Assembly and interested in Resource Recovery potential in North Carolina. This Commission is to report its findings at the next session of the General Assembly convening in February 1975.

5. Source reduction on the local level has been primarily on a voluntary basis involving both private and public sectors, but without overall guidance from any state agency.

   Promotion of Resource Recovery by any one group has been limited. The N. C. League of Women Voters has probably had more visible promotion of Resource Recovery than any other group.

D. Hazardous Waste Management

   1. State legislation for the control of hazardous, toxic, industrial and/or chemical waste does not exist. The solid waste program has been requested on occasion to evaluate borderline hazardous waste for possible inclusion into conventional landfills. This area needs study and a request for assistance in surveying and evaluating the overall hazardous waste problem is being made to E.P.A.

   2. A survey of suspected generators of hazardous waste was made in Mecklenburg County. While a number of the industries involved are making an honest effort to control their waste stream in an acceptable manner, there are some sludge problems that do not have a solution at this time. On-site storage is limited and assistance is needed on these problems.

E. Public Affairs

   In the period from early 1970 through July 1974, many meetings were held with County Commissioners since the North Carolina Program encouraged County involvement for more economical disposal systems. Prior to enactment of legislation and the passing of solid waste regulations, there were 479 land disposal sites which were mostly dumps. This number has been reduced to the above referenced number of operating sites. Assistance was sought and was provided by the N. C. League of Municipalities, the N. C. Association of County Commissioners, local Health Departments, local government, the private sector, and N. C. residents. Efforts to keep these groups informed of progress being made was realized through educational and informative meetings held across the State during the implementing period. The North Carolina Solid Waste Management Plan has been recently published. This plan presents the problems of solid waste management as they existed in 1967 and 1968 when the State solid waste survey was made. It outlines the progress made through June 1973. It also gives the objectives and operating plan for the Solid Waste Management Program through fiscal year 1977-78.

F. As referenced above, assistance is needed and is being sought in the area of hazardous solid waste management. Sludges, being created by on-site waste water treatment systems at industrial locations are not suitable for conventional landfilling. Being limited in staff and lack of technical knowledge of potential problems concerning disposal of these materials have hampered any concerted efforts to attack and to seek solutions of this growing problem. As mentioned earlier, on-site storage is limited and it is suspected that disposal of some of these materials is carried out in a less than acceptable manner.

November, 1974

STATE OF NORTH DAKOTA
SOLID WASTE STATUS REPORT

The North Dakota State Department of Health was designated as the State agency responsible for solid waste activities by the Governor of North Dakota, January 24, 1966. The Department had been active in solid waste management for many years prior to this official designation.

A study of ways to improve disposal of solid wastes was conceived in 1947 and resulted in a successful project in 1949 showing that sanitary landfilling could be feasible in northern climatical conditions. The project was the result of cooperation between the North Dakota Water and Sewage Works Conference, the United States Public Health Service, the Federal Security Agency, and the North Dakota State Department of Health. A report, titled "The Sanitary Landfill in Northern States," was published. Since that time solid waste management in the State has improved.

The Solid Waste Management Regulations of the State of North Dakota, were approved by the Attorney General, February 17, 1970, and adopted by the North Dakota State Health Council on May 7, 1970, established minimum standards for solid waste storage, collection and disposal. The Air Pollution Control Regulations of the State of North Dakota, were approved by the Attorney General, May 1, 1970, and by the North Dakota State Health Council, May 7, 1970. The effective date of air pollution regulations was July 1, 1970, and basically, prohibits the open burning of refuse. The 42nd Legislative Assembly for the State of North Dakota, passed Senate Bill #2398 which has been effective since 1971. This bill enables the Boards of County Commissioners to establish a fee system or special assessment method for repayment for services rendered.

The North Dakota Solid Waste Management Plan was completed by the Department in July of 1971, and was approved by Governor William L. Guy in October of 1971. This plan is being implemented.

The North Dakota State Department of Health has prepared enabling legislation with specific solid waste authorization for the consideration of 44th Legislative Assembly of the State of North Dakota which will convene in January of 1975. This legislation has been modeled after the Council of State Governments recommended form.

According to the 1970 Federal Census, there were 617,761 residents of the State of North Dakota. The State has an area of 70,665 square miles and averages 210 miles north to south and approximately 350 miles east to west. North Dakota is basically an agricultural state ranking high in the production of hard spring wheat, durum wheat, flax, barley, and rye. The local service industries consist mainly of providing goods and services to farmers, ranchers and residents of the State. Potatoes and sugar beets are a major crop in the eastern portion of the State. The western portion of the State is utilized primarily for grazing land by the livestock industry. There are 359 incorporated communities in the State of North Dakota with only eight communities having a population over 10,000.

The climatological conditions during the winter months cause extreme problems in conducting sanitary landfill operations. It is not uncommon to have temperatures of 40 degrees below zero farenheidt. The average number of days with zero or below is 53. Understandably, this causes extreme difficulty in maintaining a workable stockpile of material. Various methods have been tried to maintain a stockpile, but success has been very limited. Precipitation is not normally a significant problem as total precipitation varies from approximately 15 inches in the southwest corner to approximately 19 inches in the northeasterly corner.

Communities with a population under 10,000 people appear to be paying a somewhat higher cost for solid waste collection and disposal in the State of North Dakota. The Department has encouraged cooperation between communities and between counties and communities to establish area-wide or county-wide solid waste management systems to establish a broader population base. County-wide or area-wide systems which collect the refuse and haul it to an already established landfill site appear to be the most feasible. This type of system precludes the need for establishment of a new disposal site as well as the purchasing of additional equipment and related operation and maintenance costs. The major hurdle to overcome is to obtain cooperation between communities to help each other resolve a common problem.

Many of the local and State-elected officials in North Dakota do not believe that solid wastes are a major problem. These people will have to be informed of the magnitude of the situation and shown proper methods for resolving the problem. The vast majority of the smaller communities are hard-pressed to raise the necessary finances to conduct a proper sanitary landfill. Therefore, progress at the smaller community level will be very minimal until adequate funding sources can be located or until these communities can dispose of their wastes in a county or area landfill. The Department is planning an educational program to inform citizen groups, elected officials of cities and counties of the need for adequate solid waste management. The Environmental Protection Agency has provided a planning grant to the Department in the amount of $33,000 for this program. At this time, the primary emphasis will be on audio-visual slide presentation.

A. LAND DISPOSAL OF SOLID WASTE

a. At the present time, there is no State Legislation or regulations governing design criteria and State review procedures to control surface and ground water contamination from sanitary landfills. This Department is encouraging all communities to submit the legal description of the property proposed as a sanitary landfill to this Department. This Department then contacts the North Dakota Geological Survey and requests their evaluation of the potential problems should a landfill be installed at this site. Their review is primarily based upon the geological records which they have. Contingent upon the availability of personnel, equipment, and time, the North Dakota Geological Survey will test drill proposed sites where additional information is required. This Department may inspect the site after the geological survey evaluation has been received and reviewed by this Department.

b. The waste stablization pond treatment system is used by practically all of North Dakota's communites for wastewater treatment. Only two communites are involved with sludge disposal from municipal wastewater treatment plants. The larger community utilizes the sludge for fill purposes on the disposal site, for fertilizer, and can be available to farmers if they haul the sludge themselves. Occasionally, there will be an excess and this is hauled to the community's landfill. The smaller community is hauling all of the sludge to the landfill. The regulations for the control of pollution from certain livestock enterprises require that animal wastes from such facilities be disposed of on the land in an acceptable manner. The septic tank regulations require that the pumpings not be disposed of on the surface of the ground within 1,000 feet of any residence or public road, not in an area which could endanger the purity of surface or ground water, not in an area where domestic livestock would have contact, not be placed upon gardens growing vegetables to be used for human consumption, or on fields used for pasturing of livestock, and shall not be discharged into a municipal sewer system unless such permission has been obtained from proper City Officials. The septic tank pumpings may be disposed of by spreading on the land or by burying in such places and in such a manner that will not violate any of the above conditions.

c. At the present time, there are approximately 360 Solid Waste Disposal Facilities in use. Monitoring wells have been installed at one site as part of an evaluation study. There are no known sites where leachate is a proven problem and therefore, no leachate collection and treatment facilities.

d. The North Dakota Solid Waste Management Regulations have been promulgated under the broad powers of the North Dakota State Department of Health and no permit or license is currently required. It is estimated that 61% of the State population is served by adequate Solid Waste Disposal facilities. There are no State approved sites for hazardous or toxic waste disposal.

e. This Department estimates that there are 334 sites with an ultimate capacity of less than 150,000 tons. Further, there are 17 sites with a capacity between 150,000 and 500,000 tons, and 9 sites with a capacity in excess of 500,000 tons.

f. At this point in time, solid waste management has not been a significant factor in Land Use Planning in North Dakota.

B. ENFORCEMENT PROCEDURES

The North Dakota State Department of Health follows the State's Administrative Practices Act with regard to enforcement procedures. The Department conducts inspections of Solid Waste Disposal Facilities. Should an inspection reveal a continued uncorrected violation of the regulations, the Department would issue a Notice of Violation to the operator of the facility. This Notice of Violation would require the operator to inform the Department of what corrective actions they have taken since the inspection/or plan to take to comply with the regulations. This information is to be submitted in writing and to be received by the Department within the prescribed number of days. Should the operator fail to respond, the Department will call an administrative hearing as prescribed. The hearing officer shall then prepare a statement of findings and corrective order. Should the operator fail to comply with the Department's order, the hearing officer shall present all the required information to the District Court having jurisdiction for remedy in the matter. During the past 12 months, this Department has had one enforcement action which proceeded to the point of the Department's administrative hearing before satisfactory remedies were made.

C. SOURCE REDUCTION AND RESOURCE RECOVERY

The current State legislation regarding resource recovery is very limited. The 43rd Legislative Assembly for the State of North Dakota, passed House Bill #1254, commonly referred to as the Abandoned Motor Vehicle Act. This bill became effective July 1, 1973, and provides a definition of an abandoned motor vehicle, prescribes the method for removing such vehicle from the landscape, prescribes the methods to be used for contacting the owner, sets forth the procedures to be followed for holding a public sale, and enabling the North Dakota State Department of Health to reimburse the units of government for expenses so incurred. The units of government may only be reimbursed if the contract is approved by the State Department of Health. Funds for the expenses incurred are to be accumulated by a $3.00 one-time fee on the initial registration of a motor vehicle in the State of North Dakota.

The abandoned automobiles are collected, crushed, and ultimately transported to a recycling center. At the present time, approximately half of the counties in North Dakota are participating in some phase of this program. There is no other legislation related to resource recovery and/or recycling. There are no State Funds available for resource recovery operations. However, a new industry, such as a resource recovery operation, might be eligible for certain tax benefits available to all new industries to promote industrial growth of the State. There are no State purchasing policies which might be beneficial to resource recovery programs. It is anticipated that a reuseable beverage container law will be considered by the forthcoming session of the Legislature. Several citizens groups and non-profit organizations have been involved in the study of resource recovery for their communities. Generally, the markets for recyclable materials are considerable distances from the communities interested in these projects and transportation and labor costs are difficult to overcome.

D. HAZARDOUS WASTE MANAGEMENT

There is no specific hazardous waste management legislation in the State of North Dakota. Several agencies have limited responsibilities and have promulgated regulations covering these areas. The State Laboratories Department requires that all herbicides and pesticides which are to be used in the State must be registered. The Department of Agriculture has regulations covering the use of herbicides and pesticides. In addition, the application of pesticides in an airborne manner where drift could be possible is regulated as part of the air pollution control regulations of the North Dakota State Department of Health.

A survey is being planned to identify the hazardous wastes which may be used, handled, or transported through the State. This survey will be part of the fiscal year 1975 Planning Grant. It is anticipated that quantitative information will be gathered in future years depending upon the availability of personnel and funds to conduct such a survey.

E. PUBLIC AFFAIRS

The personnel from this Department actively pursue a public information program to inform the public and interested groups as to the Solid Waste Management in North Dakota. Personnel from the Department attend the annual North Dakota League of Cities meeting and when requested present information at this meeting or any of the six regional meetings held throughout the State. The County Commissioners Meetings are also attended by staff personnel and when requested bring the Commissioners up to date regarding solid wastes. Homemaker's Groups, League of Women Voters, and the Isaac Walton League frequently call on this Department for speakers. Technical information and progress reports are often published in the Official Bulletin, the publication of the North Dakota Water and Pollution Control Conference. The participation by the Department in public affairs by the Department is somewhat limited due to the lack of personnel and adequate funding.

F. CRITICAL AREAS FOR FEDERAL ASSISTANCE

The three most critical needs in the State of North Dakota where the Office of Solid Waste Management could assist are:

1. Funding for State Program Grants.
2. Training of solid waste operators and education of elected officials.
3. Updating and publishing of technical information and current practices in the State of the art for proper disposal.

OHIO'S SOLID WASTE PROGRAM

LAND DISPOSAL OF SOLID WASTE

Ohio's basic solid waste authority comes from Section 3734 of the Ohio Revised Code. This law and the regulations adopted thereunder require the Ohio EPA to approve the site and plans for all new sanitary landfills. Sites are restricted to those which minimize the potential for health and environmental problems, especially with regard to possible contamination of ground-or surface-water.

All potential sites are investigated by staff engineers and geologists, and occasionally by soils scientists of the Soil Conservation Service. Geologic, soils, and topographic maps are used in the investigations, as well as well logs from the vicinity of the proposed site. However, borings are not made by this agency. If there is some question about soils or geology that requires borings, the applicant must take that responsibility.

Sites which might require extensive or exotic preparations or perpetual maintenance to prevent water contamination are generally disapproved. Limestone quarries and gravel pits are generally unacceptable, as are flood plains. In areas less susceptible to ground or surface water pollution, natural (clay) liners may be installed if proper construction details are shown on plans. Plastic liners are not used.

Detailed plans for the preparation, development, and completion, along with data on types and quantities of wastes received, fire protection, equipment, etc., are required and are carefully reviewed by staff engineers before any permits are issued.

There are now 258 licensed land disposal facilities in Ohio. This number includes those "grandfather" sites which are licensed, but which did not undergo the site and plan approval process. Of these sites leachate is known to pose a problem at 77. Leachate collection and treatment facilities have been installed at 2 sites. There are approximately 12 unlicensed land disposal sites actively being operated.

About 91% of the state's population is served by licensed landfills. Another 7% is served by incinerators. The remaining 2% is served by unapproved sites.

Some "grandfather" sites accept small quantities of toxic or hazardous wastes. Of those sites with approved plans, none are permitted to accept toxic or hazardous wastes although some undoubtedly do. There are no sites exclusively designated for toxic or hazardous wastes.

Land disposal facilities range in size from 1 ton/wk. to over 2,000 tons per day. Approximately 151 have an ultimate remaining capacity less than 150,000 tons. Sixty-three have an ultimate remaining capacity between 150,000 and 500,000 tons. Forty-four have an ultimate remaining capacity over 500,000 tons.

ENFORCEMENT

Enforcement of the solid waste law primarily is the responsibility of the local health departments. Local prosecutors or the state's Attorney General may initiate court action. Licenses are issued annually. The Ohio EPA reviews each local health department annually to be sure the laws are being enforced. Any health department failing to meet its responsibility may be removed from the approved list and the Director of the Ohio EPA assumes local authority for licensing, inspection, and enforcement.

In practice, Ohio EPA sanitarians provide continuous surveillance of local programs, including inspection of all land disposal sites in cooperation with local health department sanitarians.

SOURCE REDUCTION AND RESOURCE RECOVERY

Ohio EPA has begun a program of state and local solid waste planning which eventually will lead to a network of regional resource recovery facilities. No central authority has been formed. However, The Ohio Water Development Authority is authorized to finance and if desirable, to construct, manage, operate or contract for operation, all types of solid waste management facilities. Regional authorities, councils of governments, or non-profit corporations may be formed, if needed, to operate, or contract for operation of resource recovery facilities.

There are no state funds available for solid waste or resource recovery grants. However, for facilities which will be self-supporting, the Ohio Water Development Authority is able to finance construction through revenue bonding.

Three source reduction bills were introduced into the General Assembly during 1974. None was passed out of committee, and none has been resubmitted yet in 1975.

HAZARDOUS WASTE MANAGEMENT

Hazardous wastes have generally been handled ad hoc in the past. However, beginning in the fall of 1974, a concerted effort has begun to establish a coordinated hazardous waste program. A hazardous waste staff of three has been appointed, and their efforts are being directed at initiating hazardous waste surveys, developing needed legislation, and developing agency hazardous waste handling procedures. In general, land disposal without ultimate treatment will be discouraged. Sanitary landfills used for ordinary municipal wastes will generally not be used for disposal of liquids or hazardous wastes. At least two hazardous waste treatment facilities have been established in Ohio during the last year, and efforts are being made to have a major company establish a complete treatment/recovery facility here.

PUBLIC AFFAIRS

In order to advise Ohio EPA on various aspects of its solid waste program, especially legislation and regulations, a Solid Waste Advisory Group was established. That group consists of representatives from nearly thirty statewide organizations which have an interest in solid waste management. Groups represented include trade organizations, labor, local government, manufacturers, citizen groups, and legislators. The advice of members of the Solid Waste Advisory Group have been extremely helpful in directing the course of the program.

CRITICAL AREAS FOR FEDERAL ASSISTANCE

The major area of concern for federal assistance is hazardous wastes. This is still a relatively untouched area, and is definitely in need of guidelines, and definitions. The establishment of national disposal sites, which has been discussed for a long time, should be pressed. It is very hard for states to take positive action in the shadow of unknown potential federal legislation. The sooner it becomes clear what federal action there will be, the sooner the states will be able to take effective action.

NATIONAL SOLID WASTE MANAGEMENT CONFERENCE

November 14-15, 1974

San Francisco, California

Solid Waste Management Summary

State of Oregon

In 1971, total Solid Waste Management responsibility at the State level in Oregon was centralized within the Department of Environmental Quality (DEQ) including responsibility for Environmentally Hazardous Wastes, defined as pesticides, nuclear wastes, and their containers. A comprehensive statewide Solid Waste Management program has been developed, administered and enforced by the DEQ, which has the following major components:

1. Promulgation of rules and standards (April 1972).
2. Implementation of a solid waste disposal facility permit program for municipal facilities (July 1972) and industrial-agricultural facilities (July 1973).
3. Initiation of a statewide plan for handling and disposal of chemical and hazardous wastes (March 1972).
4. Initiation of a statewide Solid Waste Management Regional Planning Program, including 100% planning grants (November 1972).
5. Upgrading of existing disposal systems including a statewide on-site technical assistance program for landfill owners and operators (January 1974).
6. Initiation of State financial assistance to local governments for implementation of DEQ approved, locally adopted solid waste management plans (August 1974).

Solid Waste Permit and Planning Programs

The 1971 Oregon Legislative Assembly's Solid Waste Management Act begins with a broad policy statement regarding private and public, local, state and federal roles in this statewide program and also outlines how this policy is to be carried out. Basically, this law states that the declared policy of the State of Oregon is to "establish a comprehensive program for solid waste management"..."in the interest of protection of the public health, safety and welfare". This is to be done by developing and implementing..."plans including regional approaches to provide adequate disposal sites and disposal facilities together with facilities for salvage, recycling and reuse of solid wastes"...with..."primary responsibility" ...and..."authority"..."to establish a coordinated"...regulated..."program"... retained..."with local governmental units," utilizing private industry where appropriate and assisted and coordinated by the State through the DEQ.

This Act also specified development of a state regulatory program by the DEQ and its governing body, the Environmental Quality Commission, through adoption of regulations and subsequent actuation of a permit system for the disposal sites by July 1, 1972. However, the legislative act of 1971 lacked a timetable as well as specified funds to finance the necessary state and local programs for planning and implementation of improved and innovative regional facilities. These facilities would provide the desired upgraded statewide solid waste management system, to be regulated by permits.

To provide for needed planning, the DEQ in 1972 placed the disposal sites throughout the state under temporary permits and proceeded to develop a statewide solid waste management implementation planning program. The DEQ obtained State grant funds to initiate and support this statewide program, funding regional planning projects through local governmental units to meet specific goals and objectives. A 32 member Citizens' Advisory Committee representing various disciplines from throughout the State was appointed to advise the DEQ in the development of this program and to assist with obtaining $1,229,630 in State bond grant funds, which were subsequently appropriated by the Legislature in November 1972.

Twenty-two local-regional projects encompassing the entire State were granted funds to develop their portions of the Statewide Plan, which will be assembled by the Department in early 1975. Each project developed an implementation plan which contained:

1. Specific solid waste management program implementing authority and organization at the local level.
2. A workable physical system of collection, transfer, processing and disposal emphasizing:
   a. Consolidation, upgrading and minimizing the number of disposal sites, location of new sites, and elimination of unauthorized sites.
   b. Special wastes management.
   c. Local feasibilities for recycling, reuse and resource recovery, to meet the state's goal of productive use of 90% of what is now wasted by 1982.
3. A specific financing program to establish and perpetuate facilities and services at an adequate level.
4. A program to publicize the plan, gain public acceptance of the plan and accomplish implementation thereof through involvement of individual citizens, advisory committees, groups and local officials.

The results of the State Planning Program show an accelerated move by local governments towards resource and energy recovery programs from wastes processing. This is due in part to current energy shortages, and has been accelerated greatly by the public resentment to new landfill placement. In addition, the costs to provide and operate such landfills closely match recovery alternatives. Energy recovery utilizing the light wastes fraction in existing wood wastes recovery boilers and ferrous metals recovery is the primary solid waste management alternative chosen by local governments for virtually all of Western Oregon, including the coastal regions. As a result, it is projected that 3,000 tons per day of air classified light fuel fraction will be added to the State's fuel market (net energy equivalent of 116 million additional gallons of gasoline annually). Requests for proposal documents for such systems are presently being prepared in the metropolitan Portland area and in Lane County to process 2500-2700 tons of waste daily.

The need for landfills has not been overlooked and wherever possible, existing disposal sites are being upgraded pending resource recovery or waste processing. Land reclamation sites are being sought to back up processing facilities.

The primary emphasis of this entire effort has been on implementation of the plans, with DEQ permits to require compliance of planned facilities. Approximately 43 million dollars of State grant and loan funds are potentially available to aid implementation. In view of the progress in planning and implementation that has occurred, Oregon should be well on the way toward a significantly improved solid waste management system which will continue to be an example of cooperation between private enterprise and the public sector at the federal, state and, most importantly, the local level.

Hazardous Waste Program

The DEQ's hazardous waste management program was initiated in early 1972 following passage of legislation by the 1971 Oregon Legislature. To briefly summarize the major provisions of this law, hazardous wastes are defined to include discarded, useless, or unwanted pesticides and low-level radioactive materials and their containers. The law also provides authority for classification of other residues as hazardous waste and prohibits disposal of any hazardous wastes on lands within the State except at sites owned and licensed by the State for hazardous waste disposal.

Several changes were made to the hazardous waste statutes by the 1973 Legislature. These changes provided additional authority to DEQ in the following areas:

1. Declassification of certain hazardous wastes by rule.

2. Payment of just compensation for disposal site property.

3. Acquisition of disposal sites by condemnation.

4. Use of pollution control bond funds for emergency hazardous waste disposal situations and for disposal site acquisition.

5. Proper cleanup of hazardous material spills.

During 1974, a primary activity has been the licensing of a hazardous waste disposal site. The Department has been considering a proposed hazardous waste disposal site near Arlington, Oregon since June 1972. Final action on this matter has been delayed due to questions concerning the applicant's (Chem-Nuclear Systems, Inc.) financial status and disposal of low-level radioactive wastes at the site. In March 1974, an advisory committee which had evaluated the financial and corporate status of the applicant submitted its final report, recommending issuance of a license to the company with certain conditions. In June 1974, the applicant submitted engineering plans for the site. Subsequently, a proposed license was drafted by the Department and a public hearing was held in September 1974. Final action by the Environmental Quality Commission on whether or not to grant the license is expected in late November.

The second principal activity during 1974 has been the development of hazardous waste rules. These rules were published in September in proposed form and have been distributed to federal, state and local government agencies and to various industry groups for review and comment. The major provisions of the rules include:

1. Listing of hazardous waste criteria and specific wastes (by chemical type or category) that would be classified as hazardous.
2. Storage and on-site disposal requirements for hazardous waste producers.
3. Reporting requirements for hazardous waste producers.
4. Hazardous waste transportation requirements.
5. Requirements for establishment of regional hazardous waste collection sites by counties or others.

It is anticipated that public hearings and adoption of these rules will be completed in 1975, but this will depend on the availability of a hazardous waste disposal site.

In addition to site licensing and rules development, initial EPA supported planning studies were completed and a final report was published, "Hazardous Waste Management Planning 1972-73."

Pennsylvania Report on Activities in Solid Waste Management

A. Land Disposal of Solid Waste

a) Pennsylvania has had a comprehensive solid waste management program since July 1968 when the Pennsylvania Solid Waste Management Act was enacted by the State Legislature. Rules and regulations established under the authority of the Act provide rigid controls over land disposal site operations. Permits must be attained prior to commencing operations, however, no permit is issued without a complete review and approval of soil and geological characteristics of the site and the site's plan of operations.

To monitor sites for movement of leachate from the landfill areas the Division of Solid Waste Management requires installation of ground water monitoring wells. Background water quality analyses are conducted prior to initial dumping to establish a base. Subsequent to operation of the site, quarterly water analyses are required to be submitted and are made a part of the site's official file. Any trend towards degradation of the site's surrounding water table can result in remedial action being taken by the Division.

The general criteria for evaluation and review of land disposal sites are written into the rules and regulations of the Department of Environmental Resources.

b) The processing and disposal of such wastes as the sludges resultant from municipal waste water treatment facilities, large scale animal feedlot wastes and septic tank cleanings all require permits from the Department. For waste water treatment plant sludge disposal sites evaluation for site suitability are made by the Solid Waste Management staff and the disposal sites are permitted under the original permits issued to the sewage treatment facility.

Septic tank cleanings have long been considered problem wastes with only limited control over disposal methods, however, with the passage of Act 241 processing methods and disposal sites require permits. The use of large scale animal feedlots on small acreage farms rarely occurs in Pennsylvania.

c) Total number of solid waste land disposal facilities now in use: 505
Number where leachate is a known problem: 190
Number with monitoring wells: 81
Number with leachate collection and treatment facilities: 19
Number of such facilities at which leachate has been produced: 12

d) Number of land disposal sites with State permit/license/approval: 81
Estimated percent of State population served by approved sites: 31%
Number of State approved sites for hazardous/toxic waste disposal: 0
(Note: No hazardous waste disposal sites have been established in Pennsylvania to date. Certain sites have been approved for disposal of limited types and quantities of hazardous waste.)

e) Number of sites with ultimate capacity of: (Use density of 1000 lbs/cu yd)
Less than 150,000 tons: 132
Between 150,000 and 500,000 tons: 326
More than 500,000 tons: 47

f) Act 241, while regulating disposal/processing systems to assure their pollution free functioning, provides for systems planning to insure their orderly development across the Commonwealth with service to all sectors of the population in conformance with local solid waste management plans and a broad state Solid Waste Management Plan.

The policy for the Commonwealth's solid waste management system established by Act 241 requires: municipal management responsibilities, private enterprise participation, development of local and state plans, state-wide standards and permitting and compliance programs. This program has resulted in the preparation of acceptable plans by 66 of 67 existing counties with 22 having been officially approved and 20 others in a position for official approval. These plans reflecting individual as well as 3 regional plans, integrating 22 counties, provide the detailed framework for complete waste management and will require an implementation expenditure of $100,000,000.

Of the 2565 Commonwealth municipalities, 833 or 32% have passed acceptable resolutions for plan adoption and implementation and of the 1140 required to plan and implement programs, 592 or 51% have passed acceptable resolutions.

Over $3 million has been spent for plan development and the 1970 completion of the Pennsylvania Solid Waste Management Plan projecting a goal of a totally integrated system through 11 regional groupings by 1990, resulted in the first comprehensive observation and analysis of existing solid waste conditions on a state-wide basis.

Solid waste management plans, along with other environmentally oriented comprehensive plans, will play a major role in state-wide land use plan development.

B. Enforcement Procedures

The enforcement procedures for solid waste management are limited to the provisions set forth in the Pennsylvania SolidWaste Management Act.

This legislation provides for civil, administrative, and criminal actions that can be initiated by the Department of Environmental Resources for various types of violations of the law and regulations. In general, the first approach used in the solid waste enforcement procedures is administrative action through the issuance of a "Notice of Violation". A Notice of Violation is a certified letter that is sent to a violator stating that a violation has occurred and sets forth a compliance requirement with a final date for correction.

The second step in the administrative enforcement procedure is the administrative order which is used in situations where the Notice of Violation is not complied with or whenever a permit must be denied for various reasons. Extensive and effective use is made of this order in the enforcement program. It is a very flexible type of action and can be used in most any instance. This is a formal action of the Department and is appealable to the Environmental Hearing Board which is a formal judicial body. Decisions of this Board are appealable to Commonwealth Court.

The second type of action used is a summary action (criminal). This action could really be termed quasi criminal since the penalty is monetary and the consequence of imprisonment is only if the violator fails to pay the fine. This summary is initiated by our field staff for minor violations and for closure of indiscriminate dumps.

The civil action is the third general type of action used as an enforcement procedure. The action filed in this case is usually a Suit in Equity. Special injunctions are used on occasion and only in extreme emergencies. These injunctions are obtained without a hearing but the Court must have a hearing on the merits within five (5) days of issuance. The Department also uses the various adjuncts to these types of legal action such as Consent Orders, Court Orders, Stipulation Agreements, etc.

Over the past twelve months, 80 enforcement actions have been initiated by the Department in the solid waste program. It should be pointed out that although the Department is compliance oriented, all other avenues of approach are exhausted by the staff prior to the initiation of legal action.

C. Source Reduction and Resource Recovery

On July 20, 1974, the Pennsylvania Solid Waste - Resource Recovery Development Act was signed into law. The purposes of the Act are to promote the development of solid waste disposal/processing and resource recovery systems and to provide financial assistance to municipalities in the design and construction of these systems in order to enhance the quality of air, water, and land resources. The initial funding of the Act established a $20 million low-interest revolving loan fund.

The Act becomes effective November 1, 1974, and will be administered by the Division of Solid Waste Management of the Pennsylvania Department of Environmental Resources. The Department of Environmental Resources is authorized to serve as administrator of the Pennsylvania Solid Waste - Resource Recovery Development Fund; to make contracts and employ such persons as necessary to carry out the purposes of the Act; to make loans to the municipalities and municipal authorities; to accept grants or enter into other contracts with federal agencies; and to conduct financial audits and institute prosecutions.

A municipality or municipal authority applying for a loan for a solid waste disposal/processing or a resource recovery system is defined as a development agency and the Department may loan a development agency up to fifty percent of the cost to construct a solid waste disposal/processing or resource recovery system, provided the applicant has at least five percent of the project costs in funds or property. Only municipalities which are or are in counties of the fifth through eighth classes are eligible for loans for solid waste disposal/processing systems, and they must demonstrate that they are unable to establish a resource recovery system. All municipalities are eligible for loans for resource recovery systems. Resource recovery systems must recover and market not less than fifty percent by dry weight of the total solid waste throughput of the system. Loans for new solid waste disposal/processing systems shall be made only to municipalities which are or are in counties of the seventh or eighth class, where the system shall serve a minimum population of ten thousand persons, or to counties of less than ten thousand persons, provided the system shall serve the total population of the county. Loans for existing solid waste disposal/processing systems shall be made only to municipalities which are or are in counties of the fifth through eighth classes. Loans will be for ten years, and all municipalities applying for loans must adopt an official solid waste management plan in order to be eligible.

Included in the existing functions which the Department performs in a broad resource recovery program are coordination and evaluation of systems development, assessment of incentives and disincentives to resource recovery, development of a Commonwealth Recycling Plan, evaluation of State purchasing policies, development and evaluation of legislative proposals, assessment of Federal-State assistance programs, evaluation of projects including market analyses under Act 198, development of training programs for public and private, compilation and cataloging data on equipment, financial programs, contractors, etc., establishment of liaison with research facilities, universities, demonstration projects, and others who have developed a high level of expertise in the field, and technical assistance to municipalities and others in the development of resource recovery systems and market analyses.

The Department is currently developing detailed regulations and evaluation criteria under contract with the National Center for Resource Recovery, Inc.

Other legislation has been introduced in Pennsylvania to create a research and demonstration grant program for resource recovery, a loan guarantee arrangement for resource recovery system developers, a revision to Commonwealth purchasing to allow greater use of recycled materials, a ban on non-returnable bottles and cans similar to the Oregon Law, and a grant program to finance development of resource recovery systems.

Resource recovery planning is being done at both the State and local levels. The Department awarded planning grants for development of seven regional market studies, which will evaluate market availability, growth outlook, long term viability, contractual arrangements, purchasing policies, material specifications, and other appropriate parameters. The studies are a prerequisite for the development of successful resource recovery systems and invaluable for decision making in such projects by local governments. The studies will include the important market regions and urban areas of the State and will be used to update local solid waste management plans and to develop a published inventory of market information. A broad plan was developed for the Office of State Planning and Development by the Fourth Sink Management Group. The recommendations of this study are under consideration; however, Pennsylvania's size, strong local government, and geography make such an approach difficult and extremely expensive. It assessed the potential for a massive resource recovery approach similar to Connecticut's.

Act 186 was passed in July 1974, to amend the Tax Reform Code of 1971. This law exempts processing plant equipment from capital stock taxes. Processing is defined in the Act as salvaging, recycling or reclaiming used materials to be recycled into a manufacturing process. This creates an important incentive toward the investment for resource recovery equipment.

Present State purchasing policies are being evaluated to see how more recycled materials can be used.

The Department of Property and Supplies does have a contract for supply of certain bond paper containing 100% post consumer waste, to be used by various agencies in brochures, etc.

An experimental program has been initiated in the Department of Transportation building for source separation of various grades of waste paper. The program is proposed for expansion to other State buildings and agencies. An experimental paper separation and baling operation is scheduled for the Philadelphia State Hospital. If successful, it will also be expanded to similar Commonwealth facilities which currently discard large volumes of paper.

Similar programs are being initiated by local governments, one being the Allegheny County Health Department.

Several resource recovery studies and/or proposals are being considered throughout Pennsylvania. Current systems proposals include:

(1) Materials and fuel or heat recovery - Philadelphia, Pittsburgh, Palmer Township, Northampton County; Erie, Chester County; New Castle, Delaware County; Wilkes-Barre, and Harrisburg.

(2) Composting - Altoona, Allentown, Crawford County

(3) Baling and Metals Reclamation - Mercer County

(4) Recovery of solvents, acids, plating solutions, etc. is practiced in several Pennsylvania industries.

The State participated in financing 50% of the feasibility study and market analysis of the Palmer Township project which will use a pelletized refuse derived fuel in cement kilns to supplement coal, with the ash serving as a raw material in cement.

Several other groups or agencies are involved in promoting resource recovery in Pennsylvania. These include: the Governor's Energy Council, the Joint Legislative Air and Water Pollution Control and Conservation Committee, the Department of Property and Supplies, the Pennsylvania Solid Waste Management Advisory Committee, and the Department's Citizen's Advisory Council.

Other groups as the Pennsylvania Environmental Council, the Group for Recycling in Pennsylvania (G.R.I.P.), the utility companies as the Pennsylvania Power and Light Company and the Philadelphia Electric Company, and numerous industries and local recycling organizations are, also, actively promoting resource recovery.

D. Hazardous Waste

a) Problems related to hazardous solid waste management have increased in the past two years so that a program of control on a request, complaint or a crisis basis is no longer effective. The lack of adequate program staff and excessive workloads in other elements of the solid waste management program serve to limit the capacity of the Solid Waste Management Division to carry out a comprehensive and efficient hazardous waste control program.

Existing hazardous solid waste regulations require revision in order to provide the basis for efficient regulatory controls.

Application for federal assistance has been made to enable the Commonwealth to expand the existing staff by including chemists and chemical engineers and allowing additional staff time to survey and determine the extent of the problem.

b) The survey of agricultural-industrial establishments which was conducted in 1968-69 provided significant information concerning hazardous type solid wastes which resulted from different types ot production and manufacturing; staffing and budgeting deficits have limited the Division's ability to make extensive use of the data accrued.

E. Public Affairs

Presentation of seminars, lectures, panel discussions, short courses and technical papers serve to disseminate information on solid waste management throughout the Commonwealth.

Information requests are filled regularly and passout materials, brochures, information releases and technical reports are prepared and made available to the general public.

Frequent use is made of the Department's monthly newspaper, Econotes, which is circulated widely throughout the State to discuss current program activities and changes in existing regulations and laws.

F. Critical Areas for Federal Assistance

In the past a disservice to the states has occurred as a result of promised assistance which was not forthcoming. Since the potential for receipt of Federal financial assistance, such as promised by the Resource Recovery Act, is sufficient to slow down plan implementation and facility construction until the Federal funds are awarded, it becomes an extreme disadvantage whenever the funds are held up or not provided. Examples of the program disruption which can occur is evident not only in the solid waste program but also in the water and air pollution control programs. A recommendation which can be made in respect to Federal assistance is to make no promises which cannot be fulfilled, go back and refinance the basic provisions of the Solid Waste Disposal Act of 1965 and continue to provide technical assistance to the states and to support State planning, demonstration projects, research and badly needed training programs with emphasis on the development of the potential for resource recovery throughout the United States.

PUERTO RICO SOLID WASTE MANAGEMENT PROGRAM

STATUS REPORT

1974-75

Puerto Rico completed its State Solid Waste Management Plan, which was accepted on January 24, 1973 by Administrator William D. Ruckelshaus of the U.S. Environmental Protection Agency. Governor Rafael Hernández Colón adopted the plan on May 1973. The Comprehensive Solid Waste Management Plan for Puerto Rico 1971 made three major far reaching recommendations along with several supporting proposals· The Major goals are:

1. Consolidate all existing laws that refer to solid waste management into one up-to-date law that meets present and future needs.
2. Create new legislation that gives the Commonwealth government full responsibility on a regional, island-wide basis for solid waste disposal, preferably via the establishment of a Solid Waste Management Authority (SWMA) The SWMA will be decentralized into seven regional SWMA.
3. Upgrade the quality of solid waste collection services, which are the responsibility of the island's municipal governments.

A key recommendations was made involving a structural change giving the Commonwealth full responsibility on a regional island-wide basis for solid waste disposal via the establishment of a Solid Waste Management Authority (SWMA) To implement this recommendation the Solid Waste Program prepared a detailed report that recommend the framework for establishing a SWMA, its organization, functions methods of operation, jurisdiction, and means of financing. More over this report sets out in detail, delineation of regional boundaries, proposed facility sites, design requirements, recommended facilities and broadened examination of Commonwealth responsibilities in possible resource recovery, discarded automobiles and hazardous and toxic wastes areas. It was presented to the Governor and his Cabinet on November 1973. Law Project 793, March 19, 1974 for the creation of the SWMA was introduce in the Senate by Senator Ydrach Yordán and is under consideration during this Legislative Session.

As an interim measure while needed legislation is approved and adopted for the creation of the SWMA the enforcement of the Regulation for the Control of Solid Waste will be continued.

SCOPE OF THE PROPOSED PROJECT

Planning is nearly complete at the Commonwealth level for solid waste management. Implementation of the State Plan is the next step. Creation and organization of Solid Waste Management Authority (SWMA) and planning for resource recovery and hazardous and toxic wastes studies is now necessary. In both the Comprehensive Solid Waste Management Plan for Puerto Rico, 1971, and the Solid Waste Management Authority, 1973, proposals were made which if implemented would involve Puerto Rico more deeply in solid waste management. Planning for resource recovery and for hazardous and toxic wastes are considered to be it highest priority.

The activities toward this creation are as follows:

1. Law Project 793, 18 March 1974, has been submitted to Legislature by Senator Ydrach Yordán. Action is expected during the current session.
2. Once the Law Project is enacted the organization of the Authority will begin target date for the Authority to begin functioning is January 1, 1976.

Hazardous and Toxic Wastes Program Planning. Oriented to develop a state plan for hazardous and toxic wastes disposal with respective regulations.

Development of advanced solid waste processing (Resource Recovery) and disposal systems and formulation of a long range implementation Program.

Continuing enforcement activities. A Program of continuous inspections of the municipal solid waste operations is necessary to insure continued compliance this complemented by a legal program to enforce compliance.

Work Plan By Elements

The EQB has prepared a grant for the year period 1974-75 in order to provide for the planning necessary for intermediate and long-term planning for hazardous and toxic wastes disposal, resource recovery planning and for continuing enforcement activities. Funds were approved for the following activities:

1. Hazardous and toxic wastes
2. Resource Recovery
3. Continuing enforcement procedures

During the period year 1974-75, planning will be concentrated on the development of a state plan for hazardous and toxic wastes disposal with respective regulations, resource recovery planning and continued enforcement activities.

1. Hazardous and Toxic Wastes

In order to successfully carry-out the proposed program the EQB must undertake the following steps:

a. Conduct an island-wide survey to determine the types, amounts, and locations of hazardous and toxic wastes productions.
b. Identification of present hazardous and toxic

wastes disposal sites.

c. Evaluate hazardous and toxic wastes storage and disposal sites.

d. Impact on land disposal and other...i.e... air, water and ocean pollution control system.

e. Investigate and evaluate existing Commonwealth of Puerto Rico and Federal Regulations applicable to hazardous and toxic wastes.

f. Develop a plan which can be implemented by the SWMA for handling hazardous and toxic wastes in Puerto Rico including the following factors:

   1. Land disposal methods
   2. Disposal facility locations
   3. Topographical and geological conditions
   4. Drainage control
   5. Protection of water supplies
   6. Handling hazards and protection
   7. Transportation and unloading
   8. Security
   9. Personnel training and safety

10. Records and monitoring
11. Technologies of processing and storing
12. Prevention of accidental catalytic reactions
13. Site management
14. Abandonment of sites
15. Recovery (Energy)
16. Treatment prior to disposal to destroy, detoxify or neutralize

g. Develop and enforce regulations to include:
1. Monitoring and survillance
2. Permits
3. Compliance Plans

h. Location plan showing desirable locations for new industries which may have hazardous and toxic wastes as a manufacturing by product.

2. Resource Recovery

During the period year planning will be concentrated on the development of advances resource recovery and processing systems. Task will include:

a. Investigation of the market for segregated solid wastes constituents and for energy available from solid waste processes concentrating particularly on potential interaction between the Commonwealth Water Resources Authority and the SWMA.

b. To keep abreast of existing and new technology.

c. Investigation of existing and potential markets for recycled materials, such as ferrows and non ferrows metals. paper, glass, textiles, waste oils, and organic sludges.

d. To encourage curb side collection of paper and other recycle material.

e. Source reduction

f. Consider examination of positive and negative incentives to encourage collection and reuse of solid waste constituents.

g. Establishing a detailed plan for the collection, transportation and disposal of junked autos, including processing if required, analysis of the finantial feasibility of the proposed plan.

h. Evaluate in coordination with the Water Resources Authority the feasibility of converting all of the Commonwealth's power plants to take refuse as an auxiliary fuel. (feasibility study)

3. Enforcement

In order to continue with the implementation of the Regulation for the Control of Solid Waste the following enforcement activities will be continue and augmented.

a. Periodic monitoring and surveillance of sites, inspections and notification of deficiencies noted.

b. Continuous on the job training to dump operators and supervisors.

c. Conferences with municipalities with the participation of the Project Director, the Project Lawyers and the interested person.

d. Compliance Plan

e. Orders of Cease and Desist to those municipal administration that do not comply with the regulation standards.

f. Public hearings

g. Administrative fines

h. Others

Quarterly Progress Report Puerto Rico Solid Waste Management Grant 1974-75

I. Enforcement

A total of 127 activities were accomplish during the months of July, August and September.

Inspections	47
Soil Study	7
Major Meetings	34
Cease and Desist Orders	1
Public Hearings	2
Compliance Plans	
File	1
Meetings	25
Licenses and Permits	30

A. Educational Activities

There were 15 activities performed including 11 conferences, 3 sanitary landfills inaugurations and 1 TV Program.

II. Hazardous Wastes

We are conducting a Hazardous and Toxic Wastes Study in the Industries.

The activities performed in this period were:

1. Create a file of all industries in Puerto Rico by filling out a card for each one with the following information:

   a. Name of Industry

   b. Standard Industrial Classification (SIC) Number

c. Local and postal addresses

d. Principal product

e. General Manager's name

f. Telephone number

2. Classify all industries by municipalities

3. Prepare the routes for making the survey

4. Design a questionnaire with general and specific information to be complemented by all the industries. This was a difficult task because of no available information on this type.

5. Contact all industries two weeks prior to our visits in order to explain the purpose of our Study.

As of today we have performed 137 visits to industries, filling 92 questionnaire which represents the covering of 13 municipalities. Included are the municipalities of Manatí and Barceloneta where most of the pharmaceuticals industries in Puerto Rico are located.

We are trying to allocate resources within the industries by analysing the wastes produced and the raw materials used in each industry.

Included a copy of the questionnaire letter and report forms.

III. Resource Recovery

A series of meeting have been held with the Water Resources Authority to make a comprehensive study of the economic viability of use the garbage for energy production in the Authority Power plants in Puerto Rico. For this purpose, an interagency contract was prepared between the Water Resources Authority and the EQB to perform the study during this present year. We are going to use the consultances services of a private company to coordinate the technical data of the Water Resources Authority in the power generation and the solid wastes management aspects related to the economic impact of this type of activity.

We are including a copy of the contract between the two agencies to accomplish the above mention study.

We are also planning to do some studies in the aspect of corrugated carton and paper and the economic viability for use this material in the Puerto Rico Mills for the manufacture of papers and other related articles.

RHODE ISLAND'S ACTIVITIES IN SOLID WASTE MANAGEMENT

A. Legislation Policy and Program

Rhode Island has just made significant changes in solid waste legislation.

Paramount among these changes is the creation of the Rhode Island Solid Waste Management Corporation and the establishment of licensing procedures within the Department of Health for all solid waste management facilities.

The purposes of the Corporation, among other things, are: the planning, design, construction, financing, management, ownership, operation and maintenance of transfer stations, waste processing facilities, resource recovery facilities, and all other solid waste management facilities deemed necessary by the corporation as being desirable, convenient or appropriate to carry out the provision of this act; the provision of solid waste management services to municipalities and persons within the state by receiving solid wastes at the corporation facilities, pursuant to contracts between the corporation and such municipalities and persons, the recovery of resources and resource values from such solid wastes and the production from such services and resource recovery operations, of revenues sufficient to provide for the support of the corporation and its operations on a self-sustaining basis with due regard to the provision of such services at a reasonable cost to the clients it has contracted with; the authorization through contractual arrangements of private industry for implementation of the corporation's plans and programs to the greatest degree possible and for such other activities as may be considered necessary, desirable or convenient by the corporation; and assistance with and coordination of efforts directed towards source separation of solid wastes for recycling purposes.

The Health Department, in accordance with its licensing authority, is now in the process of establishing new rules and regulations for solid waste management facilities and will shortly establish rules and regulations for licensing requirements.

B. Land Disposal of Solid Wastes

a. Rhode Island is now in the process of instituting design requirements to minimize the possibility of underground and surface water pollution from sanitary landfills. These design criteria are: No sanitary landfill shall be conducted where solid waste may be in direct contact with ground waters of the State. A minimum of four (4) feet of soil is required between the highest water table level and the lowest level of deposited refuse. An impermeable liner system or other pollution protective means as may be approved by the Department may be used to prevent leachate from reaching the ground water. No refuse shall be disposed of within a minimum of 200 feet of any body of surface water. Any solid waste facility accepting raw or treated sewage sludge, septic tank or catch-basin clean-out, liquid or semi-liquid waste, any fecal material of human or animal origin, or chemical or hazardous wastes (liquid or solid) for disposal on or in the ground, shall install monitoring wells which are constructed and located in accordance with Department instructions. Samples shall be taken from each well and analyzed by a certified laboratory at least once every three months. Analyses shall be made for determinations as required by the Department. Should monitoring well analyses or any other means of detection indicate possible pollution of the waters of the State by the solid waste facility, the acceptance of raw or treated sewage sludge, septic tank clean-out or any other fecal material, liquid or solid, shall be discontinued immediately. An acceptable system of interception, collection and treatment shall be implemented at once and shall continue until possibility of pollution of the waters of the State by the disposal facility shall no longer exist. Prior to reacceptance of the discontinued material, an engineering design which describes corrective measures to prevent recurrence of the pollution (and which is acceptable to the Department) must be submitted and the design implemented. The operator shall make provisions to have the sanitary landfill site, including the fill surface, graded and provided with a drainage system to minimize surface water runoff onto and into the fill, to prevent erosion of the fill, to drain off rain water falling on the fill, and to prevent the collection of standing water. At the discretion of the Department, any sanitary landfill may be required to install monitoring wells at locations chosen by the Department for the purpose of monitoring ground water conditions.

b. The disposal of sludge from municipal waste water treatment plants is controlled by our Water Pollution Control Division and the Solid Waste Management Division becomes involved only when a sanitary landfill, which is used for refuse disposal, is also used for sludge dumping. The Solid Waste Management Division prefers that separate tank pumping and sludges be disposed of in separate facilities. However, when disposal does take place in a landfill, the restrictions in (a) apply.

c. There are 38 land disposal facilities in use within the State. Leaching is a problem at approximately 6 of these facilities and none have monitoring wells. Neither do any have leachate collection or treatment facilities.

d. There are not yet any sites in the State which are licensed because of a lack of a licensing procedure. However, there are 7 within the State which are meeting current rules and regulations and at which the refuse from approximately 48% of the population is being disposed of.

e. The number of sites with an ultimate capacity of less than 150,000 tons is 5; the number with a capacity between 150,000 and 500,000 tons is 18 and the number with more than 500,000 is 17.

f. Unfortunately, solid waste management does not yet seem to be a significant factor in land use planning.

C. Enforcement Procedures

The State's enforcement procedures have been limited to advisory letters and informal conferences. However, with the establishment of new rules and regulations and the issuance of licenses, more formal activity is expected.

D. Source Reduction and Resource Recovery

a. One of the principal purposes of the Solid Waste Management Corporation is to encourage resource recovery. The Corporation has this capability and it is expected that they will provide for as many facilities as possible in this area.

b. There is not any special state funding available to local governments and/or private industries involved in resource recovery. However, the Corporation can issue bonds for its own purposes.

c. There is not yet any resource recovery planning being conducted at the State level but there are many local operations. Some of these local operations have local governmental support and some are totally privately financed.

d. There are not any State tax laws or purchasing policies that will benefit resource recovery efforts. There are various other groups in the State, principally ecology oriented groups, which are promoting resource recovery.

E. Hazardous Waste Management

The State is now in the process of conducting a hazardous waste survey and expects to develop rules and regulations in this regard.

F. Public Affairs

The State Solid Waste Program has been supported in the public affairs area principally by local groups interested in the formation of the Solid Waste Management Corporation and they are continuing to actively support the bond issue which will finance the Corporation.

G. Critical Areas For Federal Assistance

There are not any critical areas in the State in need of federal assistance. Federal assistance, we have found, is not beneficial when the federal government exercises its authority in establishing rules and regulations for various types of refuse disposal facilities and thereby provides a basis for state legislation.

THE SOUTH CAROLINA DEPARTMENT OF HEALTH & ENVIRONMENTAL CONTROL'S SOLID WASTE MANAGEMENT DIVISION

Last year's merger of the South Carolina State Board of Health and the South Carolina Pollution Control Authority into the South Carolina Department of Health and Environmental Control completed a consolidation which was begun just over two years ago. Dr. E. Kenneth Aycock, former State Health Officer, was appointed Commissioner for the new agency and Mr. John E. Jenkins, formerly of the State Board of Health, will serve as Deputy Commissioner for Environmental Quality Control.

In 1971, the Solid Waste Division of the old State Board of Health initiated a statewide program for consolidating disposal areas and closing open dumps. During the past two years, 95% of the town and community dumps have been closed and 60 sanitary landfills have been permitted and meet the stringent regulations promulgated by the Health Departeent.

The staff of the Solid Waste Division included three men and a secretary in July, 1971. Today the Solid Waste Division has a staff of six graduate engineers, 13 college graduates with varying degrees, three heavy equipment supervisors, and two secretaries. The budget of the Solid Waste Division has grown from $63,000 to over $300,000 during this period.

In January, 1972, the Division conducted the first of our annual training courses for sanitary landfill operators and supervisors. South Carolina has one of the best systems of Technical Education Centers in the country and these facilities are used extensively for classromm instructions. Classes were held one day per week for six weeks. Each day's instruction consisted of four hours classroom work and four hours on site demonstration and instruction. Last year over 90 students were certified through this training course.

A unique portion of the Solid Waste program in South Carolina is our operator training and certification section. The Division has employed three heavy equipment operators who possess in excess of 45 years combined experience. These men are responsible for the initial training, retraining, and certification of all landfill operators. They visit the approved landfills on a routine basis and operate the equipment and demonstrate the various techniques of landfill operation when deemed necessary.

In July of 1971, we began our program by making every effort to encourage county jurisdictions to provide landfill sites for the sanitary disposal of all Municipal, Industrial, and Rural residential solid wastes generated within their boundaries. There is no question that this is the most economically feasible plan for sanitary disposal of our State's solid waste, and this continues to be our primary objective. However, where the situation presents itself, we have encouraged a crossing of county boundaries and advocated a regional approach to the collection and disposal of solid waste.

The coastal areas of South Carolina have a serious and rather unique problem with their disposal sites in regards to a very high ground water table which exists throughout this entire area. Couple this problem with the extremely high cost of land in the coastal areas and the almost prohibitive cost of cover material and you will readily see why this area of our state sought other means of disposal then conventional landfilling operations. Approximately three years ago when the South Carolina State Board of Health began closing the open dumps of cities and counties and trying to get them to open up approved disposal operations, it quickly became evident that some alternative to the sanitary landfill was needed. At this point we needed a disposal operation that did not require trenching of any great amount, would use a minimum amount of cover material, and would utilize the least amount of land possible. After studying several different disposal and volume reduction methods, including incineration, it was decided that the shredding concept would be the most acceptable.

As of today, three counties serving a total population of 316,000 have installed this system of disposal. The first county facility to become operational has one twenty-ton unit in operation and a landfill site immediately adjacent to its pulverization plant. It is estimated that this area will accommodate the entire county's needs for over twenty years. The second county to initiate a shredder operation also has a twenty-ton unit and an adjacent disposal site. The third county has two twenty-ton units and one forty-ton unit with adequate space near the plant to accommodate an additional twenty-ton unit if needed. The immediate capacity of this unit is 80 tons per hour with two eight hour shifts and one hour down time per shift for maintenance. This gives Charleston County a comfortable margin for their anticipated 300,000 tons of solid waste generated per year. Although the initial cost of pulverization is higher than conventional disposal methods, we feel that this per unit cost will be less due to the fact that daily cover material will not be required and valuable space will be saved due to the high densities obtainable with the shredded material.

The Solid Waste Division also provides guidance in organizing, financing, and operating solid waste collection and transportation services to implementing jurisdictions. Regulations requiring minimum standards for refuse storage, collection, and transportation and permitting of private franchised collectors have also been adopted by the Solid Waste Division effective on January 1, 1974. Regulations relating to waste pesticide and pesticide containers, and general hazardous waste are in the process of being generated.

In conjunction with the centralized sanitary landfill system which is now established in South Carolina, approximately 75% of the county jurisdictions within which these sanitary landfills are operated have also implemented some form of county-wide collection system to serve the rural residents of the county.

The majority of these systems are of the "Green Box" type and are part of the total solid waste collection and disposal system. Not all of these rural "Green Box" collection systems are operated by the county. In some instances, the county has let bids to private contractors and paid the contractor for the operation and maintenance of the collection facilities; however, in most instances the county has assumed the direct responsibility for providing and operating a solid waste collection system for rural county residents.

In addition to the "Green Box" approach to solid waste collection, transfer stations and house-to-house pickup are being initiated in areas where the "Green Box" system would not be practical due to varying population densities.

To summarize the present status of solid waste collection in South Carolina, thirty-three of the forty-six counties in the state at present have some form of county-wide collection system in operation. One additional county has equipment on order and eight counties have a system under study. The remaining three jurisdictions have no plans for a county-wide collection system at the present time.

Keeping in mind these figures and also that at this time there are no laws or regulations requiring any county to involve itself with solid waste collection, it is obvious that county officials are aware of the problems associated with the lack of satisfactory collection and have accepted the responsibility for implementing a viable collection program in coordination with a comprehensive system of sanitary disposal.

Industrial growth throughout South Carolina has made tremendous strides in recent years. Textile mills, furniture, lumber and wood industries historically have been the dominant employers among South Carolina manufacturers, and despite significant gain in other industries, they still remain the primary employers. These industries employ slightly over one-half of the State's total manufacturing labor force.

Over 1500 private industries have been surveyed for solid waste management practices throughout South Carolina. Approximately ninty percent of these industries dispose of their solid waste at an approved city or county operated sanitary landfill. In order to minimize the number of disposal sites and for control purposes, the Division encourages industry to utilize the county landfills.

The disposal of industrial solid waste is governed by a separate regulation adopted for industrial disposal sites and facilities. In addition, three guidelines for permitting specific type solid waste sites are also utilized by the Division. These include:

a. Permit requirement to dispose of Inert, Nonburnable, Nontoxic waste such as cinders, broken concrete, crushed stone, and glass waste.
b. Permit requirement to dispose of cellulosic materials such as wood bark, shavings and sawdust.
c. Permit requirements to dispose of Hazardous Waste by earth burial. Such wastes include insecticides and insecticide containers, herbicides and herbicide containers, solvent residues, infectious wastes, dyes, chemical precipitates, sludges, and slurries and any other material that may be determined hazardous by the Solid Waste Division.

Existing state solid waste regulations require that all hazardous and toxic liquids, solids and semi-solids be analyzed and disposed of in state approved sites designed by a registered engineer or a consulting engineering firm. In order to gain control over the final disposal method and site for Hazardous Waste, a statewide program of licensing haulers will begin January 1, 1975.

An industry found not to be in compliance with state regulations is personally contacted and given a reasonable amount of time in which to initiate positive corrective action. If the Division is unsuccessful in this manner, then a public hearing is scheduled and all facts pertaining to the problem are openly discussed. Legal proceedings conducted through the state Attorney General's Office are sought only as a last alternative.

The Solid Waste Division has turned the corner in its efforts to eliminate and consolidate open dumps and now faces the challenging task of implementing a comprehensive state-wide solid waste management program.

H. Gerald Edwards, P.E.
Director, Solid Waste Management Division
Environmental Quality Control

ACTIVITIES OF THE SOLID WASTE PROGRAM
SOUTH DAKOTA DEPARTMENT OF ENVIRONMENTAL PROTECTION

PIERRE, SOUTH DAKOTA

by

Ronald Disrud

November 1974

ACTIVITIES OF THE SOLID WASTE PROGRAM
SOUTH DAKOTA DEPARTMENT OF ENVIRONMENTAL PROTECTION

PIERRE
SOUTH DAKOTA
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A. LAND DISPOSAL OF SOLID WASTES

a. South Dakota's Solid Waste Regulations which became effective on February 20, 1974, require that plans and specifications must be submitted to and approved by the department prior to construction of any new disposal site. Included in the plans and specifications must be a report on the geological formations and ground water elevations to a depth of at least twice the height of the proposed landfill below the proposed excavations and lowest elevation of the site.

b. In the State definitions of the solid waste, sewage sludge feedlot wastes, and septic tanks wastes would not be classified as solid waste and therefore, should not be placed in any landfill. This has not been enforced in the past but generally material of this nature is encouraged to be applied directly to the land and used as fertilizer. Several landfills utilized their sewage sludge as fertilizer in the final cover material in order to promote growth at the site.

c. The total number of solid waste landfill disposal facilities now in use: 369. The number where leachate is a known problem: 0. Number with monitoring wells: 2. Number with leachate collection and treatment facilities: 0. Number of such facilities at which leachate has been produced: 0.

d. At the present time there are nine sites which have a permit to operate issued by the department. Several more meet the department standards but have not completed the necessary paper work to obtain a valid permit. Presently, approximately 1/3 of the State's population is served by approved disposal sites. Presently no sites have been approved for disposal of hazardous and toxic materials.

e. Most of the sites utilized in the State have an ultimate capacity of more than 500,000 tons.

f. At the present time, State land use planning is just in developmental stage in South Dakota. Solid Waste management will definitely be a part of land use planning.

B. ENFORCEMENT PROCEDURES

a. The State Solid Waste Regulations have planning and implementation dates which require the largest populations of political subdivisions to be in compliance on July 1, 1975. For this reason no specific enforcement activities have taken place by the program in the past twelve months. We do work quite closely with the State's Air Quality Program which has set forth open burning deadlines on all municipal dump grounds, and the program has just participated in two contested case hearings before the Board of Environmental Protection on violations on the Open Burning Laws. No decision has been made by the Board at this time.

C. SOURCE RESUMPTION AND RESOURCE RECOVERY

a. Under State law and regulations regional Solid Waste Management and Resource Recovery authorities are allowed, no regional resource recovery authorization have been created to date.

b. State funding of Resource Recovery Systems is allowed under a financial assistance program which will fund local governmental units. Private industry in not funded under it unless a contractual arrangement has been made with a political subdivision.

c. Resourse Recovery Planning is not presently being done at the State level, however, one of the State's sixth planning districts has completed a study on the needs of the feasability of recycling in their district.

d. Presently no State laws or purchasing policies exist which would be benificial to resource recovery efforts.

e. 1974 legislature passed a Non-returnable Container Law which was based on Oregon's Bottle bill. Several amendments were added to the bill making it essentially a Litter Bill. Also the non-returnable container section of the law will not go into effect until July 1, 1976.

Several local recovery groups are presently in operation throughout the State, with these being mostly in the larger cities. They are generally operated with volunteer labor. Because of the sparse population, and the distance to market, resource recovery is not progressing very well in the State.

D. HAZARDOUS WASTE MANAGEMENT

a. The State's present regulations are very inadequate in the area of hazardous waste management, with the only regulation being that hazardous waste shall not be placed in a container for collection, transportation, processing or disposal until such methods are approved by the department. We are presently writing guidelines for the Management and Hazardous Waste and hope to become more active in this area with additional staff members.

E. PUBLIC AFFAIRS

a. Basically the Solid Waste Program works with local government units by the means of public meetings, where we provide information on solid waste management, technical assistance on planning and implementation of solid waste systems. We have in the past year condcuted several training courses where collection and disposal personnel were trained in solid waste management. We have also worked with several public and private interest groups.

F. CRITICAL AREAS FOR FEDERAL ASSISTANCE

a. The area that would be of most assistance to South Dakota would be in providing techincal assistance particularly in areas which we are just starting activities; the second area would be in financial assistance provided to the State to carry out necessary the activities to the fullest possible extent.

TENNESSEE SOLID WASTE MANAGEMENT PROGRAM

A. LAND DISPOSAL OF SOLID WASTE

Describe your State legislation, policy and program pertaining to:

a. Design criteria and State review procedures utilized to minimize the possibility of underground and surface water pollution from new sanitary landfills:

The Tennessee Solid Waste Management Office currently utilizes two graduate geologists in the evaluation of potential sanitary landfill sites. This evaluation procedure is first begun when a city, county, or private industry notifies this office that they have a site that needs to be evaluated. The geologist who covers the particular area, first makes a thorough visual survey of the potential site. He also utilizes geologic maps which are available and pertinent water well data which may be gathered from the Department of Water Resources. If the site appears to have potential, the applicant for registration is asked to conduct soil borings on the site. These borings are located by this office and are monitored by the geologist. The Tennessee Solid Waste Management Office presently owns and operates a mobile drill rig and in many cases the borings are provided free through the state office. If the results of these borings appear to be favorable, then a full geologic evaluation is written for the site with certain restrictions that must be followed in preparing the design and operating plan. These restrictions such as depth of cut, areas not to be filled, areas which can be filled, soils that are suitable, etc., are given in the evaluation.

When the sanitary landfill plans are completed, the plans are checked with the geologist evaluation and regulations for approval of the site. Many sites require monitoring wells located in areas which could pick up any ground water contamination from the operation of the sanitary landfill.

b. Processing and disposal of sludge from municipal waste water treatment plants, animal feed lot waste, and septic tank pumpings, including the utilization thereof:

The Tennessee Solid Waste Disposal Act provides under the "special waste" regulation that all of these wastes be approved by the State Health Department prior to disposal in a registered sanitary landfill. Therefore, each type of sludge is reviewed on an individual basis and approved based on the sanitary landfill in which it will be disposed. If the "special waste" appears to be suitable and would not create handling problems or disposal problems, it is approved. A copy of the approval letter is then forwarded to the generator and the waste recipient.

Septic tank pumpings are not approved for disposal in sanitary landfills because of handling problems and high moisture content. A basic rule of thumb used in disposing of municipal waste water treatment plant sludge is that the sludge be dewatered to around 80% prior to disposal. If the sludges are dewatered, they will be approved to be disposed in a sanitary landfill in many cases.

c. Total number of solid waste land disposal facilities now in use: 142
  1. Number of dumps and approved sanitary landfills where leachate is known problem: 48
  2. Number of monitoring wells: 40
  3. Number of leachate collection and treatment facilities: 2
  4. Number of such disposal facilities at which leachate has been produced: 2

d. Number of land disposal sites with state permit license and approval: 105
  1. Estimated percent of State population served by approved sites: 92
  2. Number of State approved sites for hazardous and/or toxic waste disposal: 18

Explanation: (d.2)

"This is not to say that these sites are approved for all hazardous waste disposal but are approved for those 'special wastes' which will not be a problem in this particular site."

e. Number of sites with ultimate capacity of:
  1. Less than 150,000 tons: 11
  2. Between 150,000 and 500,000 tons: 122
  3. More than 500,000 tons: 11

f. Is solid waste management a significant factor in State land use planning - Yes

B. ENFORCEMENT PROCEDURES

Briefly describe your State's enforcement procedures including administrative and judicial remedies available and enforcement actions taken during the past 12 months:

The Solid Waste Management Office uses a series of letters and legal procedures to assure compliance of the State law. Perhaps the most effective program we have for compliance is the State Grant's Law which provides for grant payments to governmental entities at the rate of $1.00 per person per year for all facilities which are eligible. In the event that site is not properly operated, the first step is to advise the entity that State grant money may not be paid. The next step is to send a written notice from the Solid Waste Management Office requesting proper compliance. If the desired compliance is not received, the Deputy Commissioner of the Department of Public Health writes a letter asking for compliance within 30 days or a realistic time to assure compliance. If the letter from the Deputy Commissioner does not receive compliance, the department will be forced to go to an order by the Commissioner which is a legal procedure outlined in the Tennessee Solid Waste Disposal Act. We would then ask the court to take injunctive action to implement the terms of the Commissioner's Order. In the past 12 months, we have had 4 Commissioner's Orders issued; and we have been in local General Sessions courts a number of times.

C. SOURCE REDUCTION AND RESOURCE RECOVERY

What is the current State legislation, policy, and program affecting resource recovery:

a. Are regional solid waste management or resource recovery authorities allowed and how many have been created?

At the present time there is no state statute which provides for the operation of a Solid Waste Management or Resource Recovery authority in Tennessee.

b. What type of State funding is available for local government and/or private industry involved in resource recovery?

The legislature recently passed the Tennessee Resource Recovery Loan Bill. This provides for a state loan to any municipality or county government who is interested in constructing a resource recovery facility. The agency must first demonstrate to the department the feasibility for the facility through a required feasibility study. If the loan is approved, then the particular facility would be eligible for up to 10 million dollars in the form of a loan.

c. Is resource recovery planning being conducted at the State or local level?

A state resource recovery plan is being contemplated for introduction to the State Legislature in January, 1975. As of this date, the plan has not been completed; however, the Tennessee Valley Authority is presently studying the feasibility of conducting a state-wide energy recovery program for Tennessee through the use of their power facilities. This plan when implemented will cover the whole state and will utilize a large percentage of the state's solid waste.

d. Are there any state tax laws or purchasing policies that may be beneficial to resource recovery efforts?

None that we are aware of at this time.

e. Has the State or any local government initiated any program in source reduction or energy recovery?

Yes, the State has in the form of the Resource Recovery Loan Bill and there are some other small communities who have taken on source separation in the form of separate news print collection.

D. HAZARDOUS WASTE MANAGEMENT

a. Describe the existing State Legislation policy, program and agency involved in the control of the generation transport processing and/or land disposal of hazardous, toxic, industrial and/or chemical waste.

Presently the only State Legislation which involves the disposal of hazardous or chemical waste is the Tennessee Solid Waste Disposal Act. One section of the act provides that any hazardous waste disposal facility be registered with the State Health Department. Under a separate section any "special waste" such as hazardous waste sludges, etc., must be approved by the department prior to disposal in an approved sanitary landfill.

b. Have any surveys been conducted or estimates of such waste quantities been made?

Yes, an industrial solid waste survey was conducted in the past two years. From the results of this survey, projections have been made as to the types and quantities of industrial waste being generated throughout the state.

E. PUBLIC AFFAIRS

Describe your program in public affairs, technical information activities and the public and private interest groups in the state that you interact with:

The Tennessee Solid Waste Management Office presently puts on a number of training and public education type programs. This office sponsors an annual Solid Waste Management Conference and Equipment Show which has been located in Knoxville for the past three years. The past conferences have had approximately 300 attendees from 15 states with city managers; county judges; planners; public health and other governmental officers from local, state, and federal agencies; engineers; private contractors; facility operators; industrial representatives, etc. The conference attracts speakers from all over the country with varied topics in the solid waste management field. Twice a year we provide a Sanitary Landfill Operators' School that requires two days of classroom instruction and a field trip to a site. This program is followed up by visits from an Operator trainer that visits sites to help operators improve operating techniques. This is a one-on-one training program that gains the most response. Seminars are provided on subjects that pertain to new technology, new laws or any pertinent information that may gain a better solid waste management program for the state. Other functions of the program are to provide assistance to local health departments in their public information and health education programs, provide speakers to any groups that has a request, and a display is available to be used at meetings, schools, county fairs, etc.

F. CRITICAL AREAS FOR FEDERAL ASSISTANCE

Briefly describe those areas where the Office of Solid Waste Management Programs could

Cannot Read

TEXAS STATE DEPARTMENT OF HEALTH

MUNICIPAL SOLID WASTE PROGRAM STATUS
November 1974

Prior to 1969, solid waste management in Texas was virtually uncontrolled except for the control of public health nuisances provided by a 1945 civil statute entitled the "Texas Sanitation and Health Protection Law" and the 1963 penal statute entitled "Dumping Near Highway".

In 1969, the Texas Legislature passed the "Solid Waste Disposal Act" (compiled as Article 4477-7, Vernon's Texas Civil Statutes) which assigned responsibility for the control of solid waste management to two State agencies. The Texas State Department of Health was given jurisdiction over municipal solid waste and the Texas Water Quality Board was given jurisdiction over industrial solid waste. With the passage of this Act, the State Health Department was given broad powers to regulate the operation of existing municipal solid waste disposal sites and to approve the establishment of new sites. While the statute seemed adequate to meet the State's needs, only $30,000 per year were appropriated to implement its provisions.

In September 1970, the State Board of Health adopted the "Municipal Solid Waste Rules, Standards, and Regulations" which provided for an effective degree of control and procedures whereby new sites could be evaluated for technical considerations. These regulations were designed to give the people of Texas as much protection as possible against health hazards and pollution from solid waste operations without the State Health Department actually entering into a permit system without sufficient funds. Inasmuch as the "Solid Waste Disposal Act" provides for the establishment of a state-wide permit system to control all municipal solid waste processing and disposal facilities, the State Health Department started to implement the permit system in October 1974.

The Texas State Department of Health has records on approximately 1,050 land disposal sites. It is estimated that there are at least 1,000 promiscuous dumps for which the Department has no records and for which no one accepts responsibility. From available field inspection reports, it is estimated that there are at least 20 sites for which leachate is a known problem. Within the past six years, monitor wells have been placed at six waste disposal sites, and applications for new waste disposal sites have included provisions for monitor wells at approximately 20 new sites within the past two years. One experimental grinding facility has a sump and a leachate collection and treatment facility. Inasmuch as monitor wells and leachate collection facilities have been installed relatively recently, results of leachate production are not yet conclusive.

Since 1970, when the State Health Department began the issuance of letters of "no objection" (in lieu of permits) for the establishment of municipal waste disposal facilities, approximately 183 facilities have been approved. It is estimated that approximately 45% of the State's 11.2 million residents are served by approved municipal solid waste disposal sites. According to information from the Texas Water Quality Board, there are 28 approved sites for hazardous and toxic wastes. It is the policy of the State Health Department to prohibit the placing of large quantities of hazardous or toxic wastes in municipal disposal sites.

State solid waste legislation, policies, and programs are not totally related to the ultimate capacity of waste disposal sites. According to the 1970 United States decennial census there were four cities in Texas with a population of 500,000 or more, 11 cities with population between 150,000 and 500,000, and 2,940 cities or identifiable places with populations of 150,000 or less. There were 999 incorporated cities in the State. As would be expected, the quantity of waste generated in a community appears to be fairly closely related to the population of the community. The capacity of waste disposal sites being operated either by local government or by private operators varies greatly. In some cases, sites receiving very small quantities of waste are large enough to last several decades; in other cases, very large communities are using sites for which the remaining life is only a few months. There are many more sites which are practically depleted than there are sites with adequate or excess capacities.

Solid waste management is not an overpowering factor in State land use planning, but it appears frequently in lists of factors considered in planning programs. In State land use plans such as the current Coastal Zone Management Program, consideration is given to the relation of the effect of solid waste disposal activities on the quality of water, particularly its effect on the water of bays and estuaries. Transportation planning at the local, regional, and State levels gives very little consideration to solid waste management. Comprehensive community plans such as those prepared using Department of Housing and Urban Development "701" funds frequently include references to the need for solid waste disposal facilities and the effects of improper solid waste management activities on communities.

The Texas State Department of Health has traditionally been an agency characterized by the provision of technical assistance in public health matters to other agencies, organizations, and citizens of the State;

enforcement has not been a significant feature in the Department's activities in the past. For many years prior to the enactment of the current legislation in 1969, the Department provided technical assistance and seldom found it necessary to resort to legal action in the enforcement of solid waste disposal site requirements, which in those earlier years were not particularly stringent. Generally speaking, the reluctance to exercise its authority and initiate legal action against violators of solid waste disposal statutes and regulations continues to the present time. The modest improvements in waste disposal management which have been realized in the past, or at least since 1969, are the result of administrative measures including provision of technical assistance to operators of waste disposal sites. Fewer than a dozen violators have actually been taken into court as a result of actions initiated solely on the part of the Department. In most cases, agreements have been reached out of court. Injunctive relief has been obtained in about six instances, and a very small fine was imposed and collected from one city.

State legislation permits regional solid waste management and resource recovery authority. One such authority, which includes three counties, was formed about four years ago.

No State funding is available for local government or private industries involved in resource recovery at this time. Resource recovery is not being planned at the State or local level. Except for State statutes which encourage the purchasing of recycled paper, there are no State tax laws or purchasing policies that would be beneficial to resource recovery efforts. Neither the State nor any local government has initiated any significant program in source reduction or energy recovery, except for three or four cities' newsprint source separation and collection. Three or four large cities are giving preliminary consideration to the potential of energy recovery from shredded municipal solid waste for use as a supplement to coal-fired boilers in the production of electrical energy.

There has been no announcement of proposed legislative actions, studies or programs in resource recovery or source reduction.

Policy statements of almost all of the large number of State agencies would endorse the concept of resource recovery. However, most agencies have had no occasion to issue such policy statements. Policy statements of professional organizations such as Texas Society of Professional Engineers and of environmental groups such as the Sierra Club, endorse the concept of resource recovery. Public information programs promoting resource recovery are just now beginning to be heard and understood by the voting public.

"Municipal Solid Waste Regulations" provide that special provisions shall be made for disposal of hazardous wastes which are proposed to be placed in a municipal solid waste disposal site. The "Solid Waste Disposal Act" defines industrial solid waste but does not define hazardous waste. Control of all aspects of radioactive waste is the responsibility of the Occupational Health and Radiation Control Division of the State Health Department. Control of certain other types of waste is the responsibility of the Texas Railroad Commission. Surveys of industrial waste have been conducted by the responsible State agency, the Texas Water Quality Board.

The dissemination of public information rests with the Public Health Education Division of the Texas State Department of Health; general information is disseminated by that Division. Technical information requests pertaining to solid waste disposal are answered by the Solid Waste Branch,

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Division of Environmental Engineering, of the Department. During the past year, approximately 1,600 technical information requests were answered by the Solid Waste Branch. Technical staff members of the Solid Waste Branch frequently present technical papers and public information addresses before public and private interest groups in the State, including solid waste seminars and workshops sponsored by the Department and other agencies and organizations.

It is felt that the Office of Solid Waste Management Programs, Environmental Protection Agency, can best assist in the resolution of environmental problems associated with solid waste management by continuing to provide technical assistance with specific problems, by continuing to serve as a source for technical publications, by increasing its assistance to institutions of higher education and private research organizations to accelerate research activities, and by reinstituting former Environmental Protection Agency solid waste management training activities.

UTAH STATE DIVISION OF HEALTH

BUREAU OF ENVIRONMENTAL HEALTH

SOLID WASTE MANAGEMENT STATUS REPORT

November 11, 1974

GENERAL

Authority for solid waste management is granted to the Utah State Division of Health under provisions of Section 26-15-5, Utah Code Annotated 1953, as amended.

Responsibility for development and conduct of the program is delegated to the Division's Bureau of Environmental Health and carried out by a Solid Waste Section, one of six similar sections exercising environmental controls within the Bureau.

Under Bureau management, Utah conducts an integrated environmental control program through activities of the six sections, eg: Water Quality (water pollution control and public water supplies): Air Quality; General Sanitation; Radiation and Occupational Health; Health Effects; and Solid Wastes. The concept of an integrated approach to solution of environmental problems has proved to be highly beneficial in Utah because of the interrelated nature of both the problems and the measures imposed for their correction.

Provisions of the above referenced statute authorize promulgation and enforcement of rules and regulations, including approval of plans, for the collection, treatment and disposal of garbage and refuse (solid waste).

A Utah Code of Solid Waste Disposal Regulations, primarily concerned with land disposal, was adopted and became effective August 14, 1974. Expansion and interpretation to address other disposal methods is anticipated as the program progresses.

A. LAND DISPOSAL OF SOLID WASTE

(a) WATER POLLUTION

Statutes and rules and regulations of the Utah State Division of Health provide authority to prevent pollution of surface and underground waters. Plans of proposed disposal sites submitted for approval must include information regarding location of adjacent water courses, water wells, drainage channels, extremely pervious soil formation and, in general, at least a five-foot separation between deposited waste and the highest ground water elevation. In addition, diversion trenches may be required in event of surface flooding, and final cover is to be graded to provide proper surface drainage and to avoid ponding.

(b) SLUDGES

Water treatment plant and digested wastewater treatment plant sludges are acceptable for disposal with municipal refuse on the working face. Raw wastewater treatment plant sludge and septic tank pumpings are classed as hazardous wastes and must be handled accordingly. Feedlot wastes should be disposed on agricultural land.

(c) LAND DISPOSAL SITES

272 community disposal sites used by 384 communities;
12 (est.) sites used by Federal agencies;
30 (est.) sites used by State agencies;
3200 (potential) private disposal sites;
11 sites have identified leachate problems
NO sites have monitoring wells
NO sites have leachate collection and treatment

(d) LAND DISPOSAL SITES - STATE APPROVED

3 sites have State approval
1% of Utah population served by above sites
NO sites as yet have been approved for hazardous/toxic waste disposal

(e) SITES/ULTIMATE CAPACITY

260 sites less than 150,000 tons
7 sites 150,000 - 500,000 tons
3 sites more than 500,000 tons

(f) STATE LAND USE PLANNING was defeated in public referendum 11/5/74.

B. ENFORCEMENT PROCEDURES

Application of the Code of Solid Waste Regulations is being initiated by a cooperative approach and planning with local entities as fully as possible. Remedies available to the Division of Health include: administrative hearings; injunctive proceedings under air and water pollution statutes; or court action for violation of rules and regulations.

C. SOURCE REDUCTION AND RESOURCE RECOVERY

(a) Regional solid waste management or resource recovery authorities are strongly encouraged and are authorized under Utah Statutes. To date four regional districts have been created by inter-local government agreement.

(b) State funding is not available to local government or private industry in resource recovery.

(c) Resource recovery is considered advantageous by both State and local entities, although no formal action relating to planning has been initiated to date.

(d) Utah has no incentive laws or purchasing policies relating to resource recovery.

(e) State legislation providing for refunds on containers failed of enactment in the 1973 legislative session. It is possible similar legislation may again be introduced in 1975.

Utah County is studying the possibility of establishing a county-wide resource recovery system.

Salt Lake City has initiated a newsprint recycling program.

A metals recovery operation is conducted by a private firm which shreds auto bodies in Salt Lake City.

D. HAZARDOUS WASTE MANAGEMENT

(a) Control of the disposal of hazardous wastes is contained within the Code of Solid Waste Disposal Regulations and specific requirements relating to the handling and disposal of such wastes are in preparation.

(b) To date no surveys have been conducted nor have estimates been made of the quantities of such materials.

E. PUBLIC AFFAIRS

Close working relationships regarding solid waste management are maintained with all interested Federal, State and Local agencies, and personnel are available for discussion of the subject or to supply technical information as requested.

A "Newsletter" relating to air, land, and water is published each month by the Bureau of Environmental Health, frequently carrying articles of interest on the subject of solid waste management.

A public display relating to solid waste is maintained for use by interested groups and an integrated sound-slide program is available upon request.

In all activities the Division of Health prefers to work closely with and through the local health departments wherever possible.

F. CRITICAL AREAS FOR FEDERAL ASSISTANCE

One critical need for additional federal assistance concerns the rural areas of the State. There is real need for financial assistance for implementation of solid waste facilities in these rural regions. Rural areas characteristically lack the funding necessary to establish adequate solid waste management systems.

Another pressing need is adequate training for solid waste staff members. Revival of Federal solid waste training programs would be very helpful in upgrading staff capabilities

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NOV 1974

VERMONT SOLID WASTE REPORT

1. Land Disposal of Solid Waste

a. The State of Vermont is currently revising the Solid Waste Disposal Regulations and Guidelines. These Guidelines will specify minimum separation distances from the deposition of solid waste and both the groundwater and all surface waters. These distances will vary depending upon the permeability of the soils. Prior to State approval of a landfill, the design engineer must provide a complete design and operational plan which includes a topographical map, location and type of cover material, size of equipment and provision for winter operation. This program is administered by the Solid Waste Section, Environmental Engineering Division, Agency of Environmental Conservation.

b. Most animal waste associated with the dairy industry and some digested sludge in Vermont is disposed on agricultural lands which are not used for crops for human consumption. Some dried sludges, however, are deposited directly in sanitary landfills. The remaining digested sludge, septage is deposited in shallow trenches and buried immediately.

c. Total number of solid waste land disposal facilities in use - 109
Number where leachate is known - 15
Number with monitoring wells - 6
Number with leachate collection and treatment - 0

d. Number of land disposal sites with State approval - 89
Estimated percent of State population served by approved sites - 90%
Number of well operated, no site problems, land disposal sites - 42
Estimated percent of State population served by well operated land disposal sites - 35%
Number of State approved sites for hazardous wastes - 0

e. Number of sites with ultimate capacity of:
Less than 150,000 Tons - all

f. Solid waste management is considered in all phases of land use and regional planning. All new sanitary landfills would be reviewed under the State's Land Use and Development Act.

2. Enforcement

Vermont's enforcement program has centered around providing technical assistance for those operations which do not comply with the State Statutes so that they may find acceptable alternatives. If this fails, an administrative hearing is convened to determine if a consent agreement for correction of the problem can be agreed to. Failure to obtain this agreement would result in the initiation of legal action either through criminal or civil sanctions. The Agency has requested such action in two cases in the past year.

3. Source Reduction and Resource Recovery

Vermont presently has no legislation concerning resource recovery. A bill to provide for a statewide solid waste management program failed to be adopted by the 1974 legislation. A similar bill will be resubmitted to the next [illegible] legislative session.

a. Regional solid waste management or resource recovery activities are permitted under State Statutes but none have been formed to date.

b. The State provides no funding for local solid waste management or resource recovery programs at this time.

c. Most of the resource recovery planning is being conducted on the state level with the exception of one county which is in the planning stage of developing a regional solid waste program.

d. There are presently no state taxes or purchasing policies which would encourage resource recovery.

e. Vermont has container legislation which requires that all carbonated beverage containers have at least a five cent deposit. This law has reduced the roadside litter throughout the state substantially and has caused a slow trend toward the use of refillable containers.

4. Hazardous Waste Management

Vermont has initiated an inventory on the disposal of hazardous materials throughout the State. Initial survey has indicated that the problem is limited in the State due to the makeup of the industrial sector. The problem is probably limited to two - three areas in the State.

5. Federal Assistance

The most critical area of support required from OSWMP is the continuation of funding for the Vermont State Solid Waste Program. Without this assistance the Vermont program could not continue effectively. In addition, small states like Vermont depend a great deal on the research and development on the Federal level in background data so that the State has needed information for the development of local guidelines for solid waste disposal and resource recovery. Lastly, the greatest assistance that OSWMP could provide is to continue to present Federal-State relationship as it presently exists, and not request additional authority from Congress to operate a Federal Program similar to the Water and Air Quality Acts. Informational requirements under these Federal Acts have become ends per se, and the prime mission of the Agency to control pollution seems to get entangled in Federal bureaucracy.

11/12/74

A BRIEF REPORT OF SOLID WASTE ACTIVITIES IN VIRGINIA

November 1974

Rowland E. Dorer, Director
Bureau of Solid Waste and Vector Control
Virginia State Department of Health

In Virginia, each city and county is responsible for the proper disposal of all solid waste generated within its jurisdiction. In the case of industry, they may pass this responsibility to the industry involved. The State Health Department is charged with regulating solid waste disposal.

About 50% of the population of Virginia live in approximately 75% of the area of the state in a rural or small town atmosphere. The rest of the people can be considered as urban or suburban dwellers. Population projections predict that the urban area will grow, but generally the rural area will remain about the same or actually lose population.

In rural areas there still remains much open land that is suitable for sanitary landfills; therefore, when a site is evaluated and approved, the longtime disposal problem is generally solved. In the urban area the situation is different. Here suitable land for solid waste disposal is getting more difficult to find; hence, solutions must be more sophisticated and expensive.

The state regulations require that all solid waste disposal facilities hold valid permits. In the case of landfills, this requires a complete evaluation of a proposed site and an operational plan. By law, the State Water Control Board has jurisdiction over the quality of all surface and groundwater. Therefore, dual investigations are made and a mutual agreement must be reached before a permit is issued. There are some 22 items that are investigated in evaluating a site, the most important being the protection of surface and groundwaters, and the availability of sufficient and suitable cover material. It has been the experience in Virginia that at least two sites are investigated for every one approved. Many sites are not considered to be safe unless special precautions are taken. This must be fully and satisfactorily covered in the operational plan. Monitoring wells are frequently required, with chemical and biological analyses before and routine sampling during the period of operation. Also at several of the large sanitary landfills, provisions have been made to collect leachate if it appears and treat same.

Great care has been taken at all new sites to prevent downward flow of water through the solid waste into the groundwater. This is accomplished by providing an impervious layer at least 4' above the water table. Leachate which comes out of the fill into surface water can be seen and protective measures taken. The problem with leachate in Virginia has been at those locations that were in operation before the state regulations became effective. At only one location holding a valid permit has serious leachate appeared. There are perhaps a couple of dozen locations which are in violation where leachate is a problem, but these are not permitted sites.

In the definition of solid waste in the regulations, sludges and slurries are excluded. In general, treated sludges are not allowed to be placed in with domestic solid waste at a sanitary landfill. It is suggested that they may be buried in a separate hole.

Where there are extra large volumes of domestic waste, approval has been given to mixing a limited amount of digested sludge in with the domestic waste. Raw sludge is not allowed to be disposed of on the land.

Forced feeding of cattle in Virginia is not extensive. In the few places it does exist, there are large acreages of land involved and the manure is spread on the fields without major problems.

In a survey completed in 1969, there were 380 solid waste disposal sites in the state, of which 75% were unsatisfactory. Since state regulations became effective in April, 1971, 164 dumps have been officially closed and 173 valid permits have been issued. Of the 94 counties in the state, all but five have valid permits for sanitary landfills and these five are making real efforts to get in compliance. Forty-nine counties have established the "Green Box" system. There are 38 cities in Virginia and half of them are in compliance, at least on a short-term basis. The larger cities have not as yet solved their problems. All are working on plans which hopefully will serve their long-term needs. It is estimated that 94% of the rural population and 60% of the urban population totaling 3,630,000 people are being served by approved sites. This leaves approximately 1,130,000 rural and urban citizens without acceptable disposal.

There is only one really large sanitary landfill in Virginia that handles 1,500 tons+ of solid waste per day. This site is operated by the District of Columbia and is a model. There are only three sites handling 150,000 tons/year. All of the rest are smaller, with many handling less than 25,000 tons/year.

Obtaining suitable land for sanitary landfills has been a major problem. No one wants a disposal site in his neighborhood. The use of public lands where they are available has helped. It is hoped state land-use planning will include this as a major factor.

The state has developed a hazardous waste disposal burial site; however, no policy has been developed for its use. Hazardous waste disposal has been handled on a case-by-case basis. A survey about to commence through an EPA grant will define the scope of the problem and will develop methods of procedure and financing.

For a number of years the State Department of Health has published "Solid Waste Notes" every other month. This newsletter, which is mailed to local government officials, state legislators, and others, has brought information to those directly concerned with the solid waste problem.

In the larger cities where the problem of long-term solid waste disposal is most acute, much consideration is being given to planning for resource and energy recovery facilities. It seems reasonable that the go ahead on several of these will be forthcoming as soon as local officials are convinced that the proposed systems are practical. It is doubtful that resource and energy recovery will be practical in rural Virginia because of the small amount of refuse available at a single location. Salvage by private volunteer organizations has been practiced, but because of the inability to meet expenses through the sale of recovered items, most of these organizations are on the verge of folding.

Perhaps the most remarkable accomplishment in Virginia has been the progress made without enforcement. The regulations do not provide for a penalty. By and large the local governments have cooperated wholeheartedly in upgrading their facilities. Many counties who had never spent any funds for solid waste disposal have expended hundreds of thousands of dollars to activate a solid waste system. Much of the government sharing funds was spent on solid waste in Virginia.

It is felt that the Federal Government should furnish leadership to the states in technical problem solving, should provide training assistance, continue the publication of technical bulletins and guidelines, and carry on research and development projects in the field of resource and energy recovery to hopefully point the way for the future.

State of Washington
Solid Waste Management Program
Department of Ecology

Washington, like other states, has come a long way from the days when the only criteria for solid waste disposal was to make sure that the open, burning dump was far enough away from the city. While many of these sites still exist within the State of Washington, they will be eliminated in conformance with an established schedule prior to 1976. This has been made possible through a coordinated local/state/federal solid waste management strategy.

Traditionally, solid waste management has primarily been aimed at the control of disposal activities related to municipal wastes, while other components and elements of a total management system were largely ignored. By contrast, Washington's program is based on the philosophy of total solid waste management. If change in disposal practices is to be effective, the interrelationships between such elements as storage practices, collection, transportation, processing facilities, energy and resource recovery, etc. must also be considered. These elements are, in turn, influenced by many factors including social and political values, public attitudes and beliefs, communication, environmental trade-offs between air, land, and water quality, legislation, financial problems, and technological constraints.

Realizing the significance of these indicated interrelationships and the complexities of the overall solid waste management problem, it becomes obvious that solutions to the "problem" can only become a reality through closely coordinated local/state/federal leadership. It was with this basic philosophy that the State of Washington Solid Waste Management Plan was developed, with the financial assistance of a federal grant, over a period of several years and officially adopted in 1971.

During development of the Plan and with the assistance of a 7 member State Solid Waste Management Advisory Committee, appointed by the Governor, legislative commitment for development of a comprehensive State-wide program was made with adoption of the 1970 State Solid Waste Management Act. Similar to the Plan, the Act is directed toward a systematic effort of closely coordinated local/state/federal activities, beginning with planning and program development and leading to a total management system of implementation, operation and enforcement.

Planning

Recognizing that implementation of the necessary systematic effort could best be accomplished by local government, being closest to the problem, the State Act assigns "primary responsibility for adequate solid waste handling to local government" (counties and multi-county areas), "reserving to the State, however, those functions necessary to assure effective programs throughout the State." The legislation was written in a manner to assure the combination of existing handling systems and, therefore, promote the development of a complete regional management system, at least county-wide. As a first step toward this coordinated effort, the legislature appropriated $769,000 ($269,000 for July 1, 1970 to June 30, 1971, $400,000 for July 1, 1971 to June 30, 1973, and $100,000 for July 1, 1973 to June 30, 1975) to assist local government toward the development of required comprehensive solid waste management plans.

By law, the local plans must include the following:

1. A detailed inventory and description of all existing solid waste handling facilities including an inventory of any deficiencies in meeting current solid waste handling needs.
2. The estimated long-range needs for solid waste handling facilities projected twenty years into the future.
3. A program for the orderly development of solid waste handling facilities for the entire county which shall:
    a. Meet the minimum functional standards for solid waste handling adopted by the Department and all laws and regulations relating to air and water pollution, fire prevention, flood control, and protection of public health;
    b. Take into account the comprehensive land use plan of each jurisdiction;
    c. Contain a six year construction and capital acquisition program for solid waste handling facilities; and
    d. Contain a plan for financing both capital costs and operational expenditures of the proposed solid waste management system.
4. A program for surveillance and control.
5. A current inventory and description of solid waste collection operations and needs within each respective jurisdiction which shall include:
    a. Any franchise for solid waste collection granted by the Utilities and Transportation Commission, including the name of the holder of the franchise and the address of his place of business and the area covered by his operation;
    b. Any city solid waste operation within the county, and the boundaries of such operation;
    c. The population density of each area serviced by the city or franchised operation;
    d. The projected solid waste collection needs for the next six years.

During development of the state/local planning program, the disadvantages of previous planning efforts were of primary concern. It was recognized that many plans become a "Book on the shelf" and never really become implemented.

To counteract this practice and assure that they become Implemented Plans, the following 3 requirements were added to the normal planning process:

1. A cordinated effort by means of a local Solid Waste Advisory Committee to assure that all those concerned had a voice in the planning process and were adequately kept informed. This was accomplished by selecting representatives from key groups in the area - representatives who, in turn, would keep their particular group involved and informed. These include the following:

    a. municipal and county government

    b. industry and agriculture

    c. federal and state agencies

    d. Indian tribes

    e. environmental, conservation and similar public groups

    f. refuse removal association, etc.

2. An implementation schedule relating to the required 6 year construction and capital acquisition program, with compliance schedule for improvement of existing inadequate handling facilities.

3. Official adoption of the plan by all cities and counties within the regional planning area, prior to approval by the Department of Ecology as required by the Solid Waste Management Act.

It is felt that the solid waste management planning program has been most successful and has shown that the planning process can lead toward implementation of a comprehensive management system. Of the 39 counties in the State, 32 have submitted plans to the Department of Ecology for approval as of June 30, 1974. The remaining 7 counties are in various stages of developing their plan. More importantly, at least 26 of the completed plans are approved, adopted and in various stages of implementation.

Although the initial regional planning efforts are quickly being completed, efforts for total solid waste management planning have just begun. These early plans speak to residential and commercial waste handling practice and provide a recommended management system for proper handling of these wastes. Increasingly, many counties are considering resource recovery facilities to solve their waste management problems. A need was foreseen for an information base from which local decision makers could compare the feasibility of various resource recovery systems. Since the Department was unable to fulfill this need due to lack of manpower, a contract was let for a State Resource Recovery Planning Study.

The purpose of this study is to help officials at all levels of government evaluate the various forms of resource recovery systems to determine the optimum system for their particular areas of the State. The study itself consists of three basic tasks.

Task I consists of a review of all available technology relating to energy conversion of solid waste. Task II is a review of all available technology on recycling and reuse of these wastes. Data on all of these processes will be put into the form of fact sheets. These will facilitate the comparison of various processes.

Task III will be the development of a methodology for analyzing resource recovery systems in local areas. The results, which will be presented in a workbook form will be made available to local, county, and municipal officials for recovery evaluation. The information will additionally be utilized to evaluate recovery systems for various areas of the State.

During October, 1974, the contractor held a two day seminar to familiarize state and local governmental officials with the results of the study. This seminar presented existing technology relating to resource recovery and demonstrated the workbook.

Following the completion of the study, it will be necessary for county, city, or regional solid waste management plans to be updated for local governments to adequately plan and implement applicable resource recovery facilities into their existing solid waste systems.

This updating of local plans is a vital necessity since the Department and local government, in conformance with Chapter 70.95 RCW, use the State and local solid waste management plans as the continual guidance mechanism for efficiently and effectively implementing environmentally and economically sound solid waste management alternatives into existing systems.

Additional elements of the plans will continue to be considered in further detail. Elements relating to industry, hazardous materials, agricultural and logging practices, mining, etc. will become major portions of the plans as they are updated in conformance with Chapter 70.95 RCW.

The Department has written proposed legislation regarding hazardous waste. This will be introduced during the January, 1975 session. The law will cover all parts of a management system. Generation, storage, collection, transportation, recycling, neutralizing and disposal will become an important part of the body of State law.

The need exists to develop a program for the handling of hazardous waste. A state-wide inventory of industrial and hazardous wastes produced by selected industries has been completed and the results analyzed.

Planned for the immediate future is an expanded inventory of other industrial and non-industrial generators of hazardous wastes. This survey will be analyzed and the results combined with the original survey. A management system for handling hazardous wastes will result and these results will be incorporated into the updated State Solid Waste Management Plan.

Regulations

Another critical element for development of a complete solid waste management strategy was completed by the Department of Ecology, in coordination with local government and the public, by adoption of the Minimum Functional Standards for Solid Waste Handling on October 24, 1972. Formulation and adoption of these Standards was in response to the Solid Waste Management Act.

This represented many months and years of work by the Department of Ecology staff and many individuals and groups around the State, including the Governor-appointed State Solid Waste Advisory Committee, Washington Association of Counties, Association of Washington Cities, Association of Washington Business, Washington Grange, Refuse Removal Association, American Public Works Association, local health departments, engineers, planners, and the League of Women Voters.

The adoption of the Minimum Functional Standards for Solid Waste Handling marked a milestone in development of the local/state/federal solid waste management program. Up to this point, the Program was basically one of planning, education and technical assistance - one of trying to inform all those involved of existing solid waste handling problems and the critical need to improve these conditions through a system of total management. With the adoption of the Standards, representing a regulatory and enforcement element, the basic framework became available for a complete program.

The Standards provide guidance for the total handling of all wastes disposed of on land, specifically speaking to storage, collection, transportation, recycling and reclamation, and final disposal, including sanitary landfills, incinerators and composting facilities.

Of particular importance is that portion relating to the upgrading of existing non-conforming sites and/or facilities. If sites and/or facilities cannot immediately be brought into conformance with the Standards, a compliance schedule for such improvements must be developed by the owner and/or operator in coordination with local jurisdictional health departments and the regional offices of the Department of Ecology. As of June 1974, 81% of the 367 remaining dumps were on compliance schedules to be systematically eliminated prior to January 1, 1976 (see Attachment A for solid waste disposal facilities status). Compliance schedules must be submitted to the jurisdictional health department which has the statutory responsibility to develop a regulatory and permit system for the annual registration of all solid waste facilities located within their area of jurisdiction. In the development of this regulatory program, the local health departments may either adopt the State Minimum Functional Standards for Solid Waste Handling, or enact more stringent ordinances. It is required that jurisdictional health departments also use application forms prepared by the Department of Ecology for the annual registration of sites and facilities (Attachment B relates permits to water quality control). Perhaps even more important, these Standards more effectively draw other elements of the overall activities closer together, whereby the systematic approach to developing a total solid waste management program can more easily be demonstrated. The better understanding of this effort will, no doubt, greatly benefit the tasks which lie ahead.

Implementation

During development of the coordinated local/state/federal solid waste management program, 3 major problems became increasingly apparent. These are:

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1. the lack of sufficient funds for the immediate improvement of existing sites and facilities, and, at the same time, for the construction of critically needed new facilities;

2. difficulty to locate and acquire adequate disposal sites acceptable to residents of the area; and

3. the corresponding need to use existing and new technology toward the development of new economic alternatives for solid waste handling.

Attention is being directed at solving these major problems through the newest activity, the Washington Future Program.

In November 1972, the people of Washington overwhelmingly voted for a financial assistance program, known as the Washington Future Program, that among other activities, authorizes $225 million for construction of solid waste management and water pollution control facilities. This program is to be conducted for a period of 6 years and will terminate in 1979. The solid waste portion of this Program will make in excess of $30 million available to local government to implement the capital construction projects designated in their local solid waste management plans, a $90 million need.

During development of the Solid Waste Management portion of the Washington Future Program, continued emphasis has been placed on closely coordinating these activities with other elements of a total management system. Efforts to counteract the dilemma of local government falling into the practice of wholely relying on state and/or federal funds to implement necessary local construction needs have also been of primary emphasis. Based on these concerns, the following five mandatory requirements were established and must be fulfilled before an applicant can become eligible for a loan and/or grant through the Washington Future Program.

1. The proposed project must conform to the local comprehensive solid waste management plan approved by the Department of Ecology.

2. Existence of a permit system, administered and controlled by the local jurisdictional health department, for the annual licensing of all sites and facilities within that jurisdiction.

3. Existence of local regulations or ordinances relating to total solid waste handling.

4. Existence of an operating organization to assure proper operation of all solid waste handling facilities, in conformance with the local solid waste management plan.

5. Existence of a viable financing structure including supporting agreements, rate structures, tax structures, etc. to assure financial support for proper operations and maintenance and fulfill future construction needs.

The funds allocated for this program can be used by local governments to finance pre-construction engineering and to acquire disposal facilities and equipment. One hundred percent of the pre-construction engineering (limited to 7% of the total project costs) can be funded with a non-interest loan. Grants of up to 50% of the capital costs of a project are also available to those jurisdictions meeting the above requirements.

For the period from July 1, 1973 through June 30, 1975, $8.9 million has been allocated for solid waste loans and grants. As of this date (July 12, 1974) about $1.4 million has been committed to 13 projects (6 loans totaling $226,000 and 7 grants). This leaves about $7.5 million for the period from present to June 30, 1975. Competing for these funds are about 35 projects totaling over $20 million.

Projects being funded under this program are expected to have far reaching and long lasting consequences. All involve implementation of systems which are more regional in scope than has thus far been the case. This permits local jurisdictions to centralize their solid waste handling operations, thus taking advantage of greater economy of scale. This will have increasing importance as recycling and resource recovery become more viable elements of solid waste handling. This is because the first, and perhaps most critical, step toward implementation of a resource recovery system is consolidation and centralization of waste handling.

Many of the projects being funded through the Washington Future Program are directly related to resource recovery. The following briefly summarizes these projects:

- Feasibility study of incineration for heat recovery in Cowlitz County.
- Processing equipment (magnetic separator, shredder, and conveyor belts) also in Cowlitz County.
- Feasibility study of pyrolysis plant which could produce a marketable gas for energy production in Grays Harbor County.
- Equipment and operating expenses for one year of a recycling station in Kittitas County.
- Negotiating with the Honor Farm at Monroe to construct a plant for producting methane gas from animal waste.

Realizing that new technology will play a dominant role in the solid waste handling systems of the future, the Department is also participating in and promoting other innovative proposals. Research has been undertaken by Battelle Northwest and the City of Kennewick, Washington, through an EPA grant, to consider pyrolysis as a means of energy conversion. This research has shown very favorable results and as a consequence, pyrolysis is being considered by several counties of the State as an economic alternative to their local needs. Through pyrolysis, solid wastes, including residential and commercial wastes, wood wastes, etc. could be converted to gases, which in turn, would be converted to energy and marketed to local industry.

There is, in the State, a tremendous need to analyze and develop a program for the handling of industrial, hospital, and hazardous wastes. In coordination with local government and EPA, a state-wide inventory relating to the quantities, types and current methods of handling such wastes was conducted and the results analyzed by the Department of Ecology. This represents a beginning toward the development of a better management system and improved techniques for handling, recycling, reclamation, neutralization and/or final disposal of industrial, hospital, and other hazardous waste materials.

In reflecting upon the State of Washington's achievements resulting from the indicated cooperative local/state and federal strategy, considerable advances have been made toward accomplishing the purposes of the State Solid Waste Management Act and the Federal Resource Recovery Act, and toward fulfilling the desires and needs of the "people." There is, however, a tremendous need to expand on this joint purpose through maintaining financial support of existing strategies and through initiation of new commitments to critical problems.

Critical Areas For Federal Assistance

Four areas felt to require federal assistance are hazardous waste, resource recovery, social costs, and leachate treatment.

Hazardous wastes require standard definitions. To provide consistency of handling these materials, they must be defined at the federal level. The federal government should provide funding for capital construction and operations. Hazardous waste handling systems' costs should be charged back to the producers of wastes that result in excessive handling and disposal costs.

Resource recovery and energy conversion programs initiated at state, regional, or local levels need assistance in several areas. Tax adjustments, interstate and maritime freight rates, and materials specifications need federal legislation.

The federal government should undertake an immediate study to find the socio-economic costs of environmental degradation. Environmental costs to date have only dealt with economic costs.

The federal government should initiate leachate treatment studies. Knowing where leachate exists is a necessary first step to resolving this problem, but also needed is research that will lead to neutralization, abatement and/or prevention.

Attachment A

The data below were compiled from Department records;

1. (a) Total numbers of land disposal facilities now in use: 324 open dumps, 30 sanitary landfills, and 43 modified landfills.

   (b) Number with ground or surface water problems: 123

   (c) Number of monitoring wells: 18

   (d) Number with leachate collection and treatment facilities:

   8 collection, 2 treatment

   (e) Number of such facilities where leachate is produced: 3

2. (a) Number of land disposal sites with permits: 20

   (b) Estimated percent of state population serviced by approved sites: 23%

   (c) Number of State approved sites for hazardous/toxic waste disposal: 1

3. At this time the Department has no exact information regarding site capacities and any figures quoted would be speculation.

Solid waste management is a significant factor in land use planning in the State of Washington. Siting becomes more difficult each year. Impacting on satisfactory locations for solid waste facilities is the Federal and State Shoreline Management Acts, flood plain control, zoning restriction and the proposed land use legislation presently being considered. It becomes increasingly apparent that all solid waste handling facilities (i.e. reclamation sites, transfer stations, etc.) must be carefully sited now to prevent future land use problems.

Attachment B

WATER QUALITY CONTROL

The control of water pollution created by sanitary landfills in the State of Washington depends on adherence to the State of Washington's "Solid Waste Management Act," Chapter 70.95 RCW.

The Act states, "After approval of the (local) comprehensive solid waste plan by the Department (of Ecology) no solid waste disposal site or disposal site facilities shall be maintained, established, substantially altered, expanded or improved until the county, city, or other person operating such site has obtained a permit from the jurisdictional health department pursuant to the provisions of the Act."

Further, the Act is explicit regarding the issuance of permits. The permit is obtained by application on a form prescribed by the Department of Ecology. The application contains a description of the proposed or existing facilities and operations at the site, plans and specifications for any new or additional facilities to be constructed and such other information as jurisdictional health department may deem necessary.

The permit requirements are backed up by state and local minimum functional standards. The standards prescribe that adequate pollution control measures be adhered to. Surface water must be deverted away from or under the site. Ground water pollution controls shall be provided as needed. The detailed plans for such controls shall be submitted to the health departments.

The application for a site permit must contain the following minimum information regarding ground water:

1. Depth To Ground Water - Give both a MSL (mean sea level) and depth from surface to ground. Give the methos of determinations and give seasonal variations. Locate the wells or boring on a topographical map and provide the log to the well and the method of drilling.

2. The directions of movement should be determined whenever possible.

3. Discharge points of ground water will be indicated on a topographical map. In addition, the distance and direction of discharge from the proposed site, the name or names of the discharge points and the area tributary to the discharge point should be noted. Some of these may not have been determined but justification should be provided if the information cannot be determined.

4. A written description of the subsurface information in more detail than was given above or in addition to the above will be submitted.

5. Indicate how the information was determined.

In addition to detailed information required of ground water, the following surface water information must be submitted:

1. The flooding hazard frequency will be given and number of times in a period of years. If the water course records are available, please attach, or give reference.

2. Indicate whether a discharge of leachate to the surface waters is planned.

3. Indicate whether leachate collection and treatment facilities will be constructed, and if so was a waste discharge permit application submitted.

4. Indicate the size of the watershed above the landfill in acres. A map showing the watershed limits should be attached, if available.

5. Indicate the rainfall in inches, the annual value, the peak 12-hour value and the peak one-hour value.

All of the applications received by the local health departments are reviewed in detail by two agencies; the health department and the Department of Ecology. The Department and the health department must investigate every application as it maybe necessary to determine whether a site meets all applicable laws and regulations.

N. H. DYER, M.D., M.P.H.
STATE DIRECTOR OF HEALTH

State of West Virginia
DEPARTMENT OF HEALTH
CHARLESTON 25305

November 12, 1974

Mr. Tom Whelen, Chairman
Office of Solid Waste Management Program
State Committee EPA (AW-564)
Washington, D. C. 20460

Dear Mr. Whelen:

Charles Howard's October 21, 1974 request for report of state activities was rather late reaching me, so I have used the attachment as the most up to date summary of the West Virginia solid waste story. I believe it embraces parts B and C of your outline rather fully.

The following information is keyed to your suggested outline:

A. LAND DISPOSAL

a. Design Criteria. Copy of Regulations and Design Standards is attached.

b. Municipal Treatment Plant Sludge Only. This program advises the Sewage Program who in turn include sludge disposal in their permit.

c.	Total number disposal sites	192
	Number with known leaching	?
	Number with monitor wells	1
	Number with collection/treatment	12
	Number these with leaching	7
d.	Disposal sites with approval/permit	24
	Percent state served	15%
	Sites approved for hazardous waste	2
e.	Sites under 150,000 tons capacity	210
	Sites 150,000 to 500,000 ton	6
	Sites over 500,000 ton	0

f. Solid waste management has not been significant in land use planning.

D. HAZARDOUS WASTE

a. These generally fall under the definition of industrial process waste, within the jurisdiction of the Department of Natural Resources.

b. No survey has been made.

E. PUBLIC RELATIONS

We have no formal (funded and staffed) public relations program, although it is sorely needed.

F. AREAS FOR FEDERAL ASSISTANCE

These are two-fold, funding assistance and restoration of the former Cincinnati training programs.

Sincerely yours,

Dale Parsons

Dale Parsons, Director
Solid Waste Program

DP/sc
cc: Mr. Charles Howard

Condensation of
TESTIMONY ON SR 14 OF 1974 LEGISLATURE
TO
JOINT COMMITTEE ON GOVERNMENT AND FINANCE
10 JUNE 1974
by West Virginia State Health Department
on
Urgent Need to Establish a Solid Waste Authority in West Virginia

The State Solid Waste Management Plan of 1970, prepared under an EPA grant addressed itself to defining the State's solid waste problems and made a number of recommendations including legislation to establish a central management agency. The 1971 Supplement to this plan further substantiated this need.

A brief space does not permit adequate consideration of all facets of solid waste management in West Virginia. We will, however, highlight major problem areas.

To give some feel for the true magnitude, highway littering -- although very widespread and utterly deplorable -- is not a large part of the problem. The principal need is for disposal places; places that do not desecrate our ground, contaminate our water, pollute our air, and create health hazards that threaten future generations.

The State's daily municipal wastes, finely pulverized and spread evenly over the 55 counties, would amount to a layer five millionths of an inch thick. Nature can easily handle this but when placed in piles, it can take years to complete the natural process. During this delay public health problems and nuisance conditions prevail. West Virginia has 42 places with permit but about 260 vile open piles remain.

There are only three environmentally acceptable methods for disposing of solid waste; incineration, recycling and sanitary landfill.

Incineration is prohibitively expensive for our state. Recycling, while unquestionably the wave of the future, is now far too dependent on unproven technology. Sanitary landfill, on the other hand, is five to ten times cheaper than any other proper method known today. A sanitary landfill is not an open dump, it is just exactly the opposite. It has been called "A decent burial of our wastes".

The first problem encountered is money; or rather it's lack. It takes tens of thousand dollars to operate a sanitary landfill for one year whether sitting still or going full bore. Where does the revenue come from? Keep in mind that a sizeable portion of our population is on fixed, limited incomes, small pensions, welfare cases, etc. If twenty thousand people can be served, cost is two or three dollars per year per person. This is not bad, but for only a few hundred population, it can run into several hundred dollars per family. Few cities in West Virginia can provide this service at a reasonable user cost.

An answer is to let the smaller places go together and share the cost of one facility, precisely what we recommended in the Solid Waste Management Plan of 1970. It is an excellent idea but has one fatal drawback, it just does not work. Cooperative efforts to establish solid waste systems are limited to only a few instances in West Virginia. There are several apparent reasons, petty jealousies, suspicions, distrusts and fears of subrogating some precious sovereign rights. Garbage is unglamorous and at a distinct competitive disadvantage. Officials dislike arousing the voters with a rate increase or accepting an unfavorable hauling distance. All the foibles of human nature, you name it, conspire to prevent successful voluntary cooperative action.

The private hauler faces monumental obstacles. Most are poorly educated, very few of them can obtain a business loan, and until now it has taken upwards of a year to obtain a rate increase. Customers cheat him unmercifully in several ways. People more away, simply refuse to pay a bill after months of service, or place their garbage in a neighbor's can. Most private haulers get enough money to buy a truck and then struggle the rest of their lives.

This brings up the matter of qualified people, something we simply do not have and desperately need. Our pitifully small solid waste staff represents a sizeable fraction of West Virginia's expertise in this field. In the rare city with such a person, he can devote only a few minutes each day at best to solid waste matters. Our limited staff cannot begin to provide the training program needed for the state. It is a strain for us to put on a small number of two-hour sessions. A week-long seminar is needed for engineers who prepare landfill designs but, how do we get those who need it most to attend? Much time is spent attempting to train these individuals one by one in a painful plan review process.

One of the encouraging signs is that people are beginning to realize it does not have to be this way; it should be better. We receive more and more complaints and all too often we can really do little about it. Simply closing a dump is not a solution. First, the waste will keep coming -- you stop it here, it simply appears over there. Secondly, anguished citizens and officials cry, "What are we to do with it?" Nevertheless, we have closed or been instrumental in closing several dozen open dumps without creating other problems.

Solutions are in most cases complicated by funding problems, undersized wastesheds, lack of applied management, scarcity of acceptable disposal sites, and resistance to change. Passage of a solid waste management authority act with concurrent funding would provide the tools to overcome these problems.

The mandate given us is, of course, to eliminate the health hazards of open dumping. We attempt to bring the larger places into compliance first, but this is not always entirely successful. Some small place may become such a problem we can no longer tolerate it. We are extremely hardnosed about new sites, insisting they comply fully with the regulations and the law. These actions invariably prompt charges of discrimination.

We have learned the hard way about due process, documentation, etc., and proceed with deliberation in any enforcement action just in the event a court case results. Court actions always involve several precious man months time. In all these instances, and in landfill site protests, we are of course always the bad guys.

Ironically the West Virginia citizen is now paying over half what the true cost should be, and getting only a miserable fraction of the job done. A third of our populace has no collection service. It is a pathetic example of scrambled priorities.

Do not lose sight for one minute of the sociological factor. Practically everyone wants his waste taken away -- and he means away! Nothing unites a community faster than a landfill protest. And nothing scares a county commissioner more than a protest. These factors of course compound the problems of landfill selection enormously. We most certainly do have technical problems, for good landfill sites are choice property. In fact, one of the best we have seen is the new library grounds here in the capitol complex. Imagine the protest that would generate!

Litter, as mentioned earlier, is too often equated with pollution. Let's distinguish between "visually offensive" and "environmentally defiling", that is, those contaminating products that affect plant and animal life processes. We support "ban the bottle" type legislation as providing some help, but it does not really go to the heart of the problem. We very seriously need to deal with the health hazards of disease and toxic products of inadequate waste disposal.

We also have so called hazardous wastes, that is, potentially deadly materials. We dare not permit these in municipal type landfills which simply are not capable of handling dangerous waste. However, these wastes must be handled -- and handled well. Such careful control is itself a very potent argument for a solid waste authority.

HB 1065 introduced February 8, 1974 establishing a Solid Waste Authority was proposed as one means of combating these problems. It is a management agency providing design and technical assistance to and contracting with the private and governmental sectors for operation. It provides service without a fee to the user. It regionalizes on the basis of transportation networks and waste densities rather than upon political barriers. It eliminates untold duplication and utilizes professional personnel full time and efficiently.

HB 1065 does something else too. Sanitary landfill is only an interim solution -- not really a very good one but the best we have. Eventually, waste generation must be reduced and most wastes that cannot be eliminated must be reused. Re-cycling as it is called has not yet been notably successful because of untried black box concepts attempting to leap past today's realities to tomorrow's Utopia and ignore the laborious steps in between. Another important requirement for successful re-cycling, it must be large scale. The bill proposes two down-to-earth recovery processes. Reclamation of cardboard paper and a metal shredder. These two projects alone can provide revenues equal to about one quarter of the total overall cost.

We do have an alternate. Give us a large police force. Give us collateral powers. Give us legal staff. We don't really want this but it is the way we are forced to operate now on a very small scale.

We have adopted recently amended solid waste disposal regulations that contain two new, and we think, very important provisions. They require registration of all waste handlers; state agencies, local governments, and private. We now can reject an applicant if he cannot assure us he won't just create another nuisance. We are using these tools to promote the regional concept in keeping with the recommendations of both our solid waste management plan and the solid waste authority bill. We would hope we do not have to rely entirely upon this particular regulation to end open dumping in West Virginia.

As a related matter there are now several proposals for out of state solid waste, any one of which would import a volume equal to that generated by the entire state. Do we simply ban it? How do we legally control the input? How do we ensure continued care years afterward? Frankly, we think the Health Department should not make these final decisions, but that the ultimate verdict rests with the legislature or the courts.

STATE OF WYOMING

SOLID WASTE MANAGEMENT REPORT

November 14, 1974

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
State Office Bldg. West
Cheyenne, Wyo. 82002

A. LAND DISPOSAL OF SOLID WASTE

The first authoritative and specific legislation dealing with solid waste management came into being in Wyoming with the Environmental Quality Act of 1973, enacted by the 42nd state legislature. Article 5 of this statute places the responsibility for such management under the Director of the Department of Environmental Quality. The measure defines solid waste to mean "garbage and other discarded solid materials, including solid-waste materials resulting from community activities, but does not include solids or dissolved material in domestic sewage or other significant pollutants in water resources, such as silt, dissolved or suspended solids in industrial waste water effluents, dissolved materials in irrigation return flows or other common water pollutants".

The Act further specifies that "any person or municipality" is governed by its requirements.

Powers and duties of the Director are enumerated as follows:

1. To coordinate activities of all state agencies concerned with solid waste management and disposal
2. To advise and consult with any person or municipality with respect to providing technical assistance in solid waste management technology, including collection, storage and disposal
3. To approve disposal sites prior to their use
4. To request information regarding present sites for the purpose of determining adequacy and approvability
5. To promulgate rules and regulations for operation of solid waste disposal sites
6. To promulgate guidelines, recommend procedures and offer technical information relevant to collection, storage and management of solid wastes

The requirements for an individual or municipality (defined to include the usual political subdivisions) include the following:

1. New disposal sites being proposed for use must be described by plans, including drawings, specifications and descriptive information in sufficient detail to describe the location, local ground surface, groundwater conditions and distances to roads and dwellings.
2. A municipality must consult with the Director and submit information for initial review of the site with respect to its adequacy, absence of water or air quality effect, and overall utility as a disposal site.

General provisions of this article of the Act include the statement that "any water quality or air quality violation at existing sites will be cause to require abatement and relocation. Aspects of undesirable, although non-violating character, such as poor access, aesthetic site management or other aspects of undesireability" requires a study by the Director for the purpose of recommending improvements.

This law became effective on July 1, 1973 and only recently, with the approval of the Solid Waste Management Grant, have funds been available for hiring full-time staff for the program.

Presently there are only six municipalities which have sludge digesters as part of their sewage treatment systems. In most cases, digested sludge is used as a soil conditioner in municipal parks and golf courses. In others it is disposed of in the sanitary landfill. Most counties have problems with indiscriminate roadside dumping of septic tank discharges and similar deposits at open dumps in remote areas where surveillance is difficult.

All municipal solid waste facilities that can be properly identified as a "facility" are landfill operations of some kind or another. With the wide open spaces and dry climate in Wyoming, it is expected that this method will continue to be favored as long as land is available at reasonable costs. At the present time there are 45 towns and 6 counties utilizing landfills in Wyoming. Leachates are not a known problem except in a single instance where a town of 4,200 people chose an unacceptable site where the groundwater table was intersected by the landfill excavation. An enforcement action in the form of a cease and desist order was filed by the Department of Environmental Quality. Last week, plans for an alternate site were received for review. The general absence of shallow ground water and drainage systems at existing sites has precluded any known leachate problems thus far.

The program on the state level has not been established well enough to institute a formal approval system. One toxic material site in the form of a nitrate disposal well is in operation.

Existing site capacities have not been catalogued. It is felt that solid waste management by industry and municipalities will become a significant consideration in land use planning. This is especially true because of the enthusiastic predictions on fossil fuel development for low population density areas like Wyoming.

B. ENFORCEMENT PROCEDURES

The state law authorizes issuance of cease and desist orders whenever environmental control measures are not forthcoming on a voluntary basis. These orders may be issued administratively, by the Department, and legal counsel is provided by full-time staff from the state Attorney General's Office. Compliance times may be specified in such orders and they become final unless appealed within 30 days after issuance. The first appeal is heard by the 7-member Environmental Quality Council, whose principle duties are to function as a standard-setting and appeal body. The Council may affirm,modify or rescind the order. It may also issue additional orders for abatement or compliance. Violators of an order face substantial penalties upon conviction. Fines for conviction may be assessed up to $10,000 per day, and are recovered in civil actions. Willful violations are punishable by fines not to exceed $25,000 per day and second offenses are punishable by a maximum of $50,000 per day. All damages are court assessed.

Two cease and desist orders have been issued against municipalities for solid waste violations within the past 12 months. One was appealed to the Council where the Department action was upheld with a time extension. It has now been appealed to the courts. The second order involved open burning considerations, was not contested, but subsequent violations occurred and a court mandatory injunction has been filed.

C. SOURCE REDUCTION AND SOURCE RECOVERY

Statutory options which have been mentioned are considered to provide a mechanism for developing source reduction and resource recovery systems where they can be made practicable. With an extremely low population density of 350,000 people spread over 97,900 square miles, we do not have the best potentials due to the great distances between population centers. Transportation problems exist for industrial waste utilization due to unfavorable freight rates and accessability of recycling centers. The wood wastes generated at sawmills are usually incinerated, with minor uses as feedlot bedding and chip board products.

Flyash disposal from mine-mouth power generating plants is accomplished by burial of the residues in mined-out areas as part of reclamation plans. The announced construction of a 1500 megawatt facility about 150 miles from the mine will necessitate a well planned waste management program due to the relatively high ash content of Wyoming coal. A plant of this size is designed to consume 750 tons of coal per hour, producing 1,800 tons of flyash per day. Only a small portion of this volume can be readily used for lightweight aggregate or other known recycling programs.

D. HAZARDOUS WASTE MANAGEMENT

One reference to toxic wastes is made in the law in an emergency section where human, animal health or safey are mentioned.

Industrial materials are mentioned under mine reclamation provisions of the law where any "acid forming or toxic materials constituting a fire, health or safety hazard created by a mining operation must be treated or disposed of in a manner to prevent pollution of surface or subsurface water". Mining permit applications now in process under this Act will give the Department information on location and extent of such materials.

E. PUBLIC AFFAIRS

An information officer has been recently hired whose principal function is to work with the Air, Land, Water and Solid Waste programs on public relations and technical information activities.

F. CRITICAL AREAS FOR FEDERAL ASSISTANCE

The development of comprehensive standards and guidelines will be a necessary first step in program development. Field inventories and surveillance based on the application of these measures is also a prime consideration for a beginning effort. The public visibility of the program is important and can aid the other inter-department programs in areas of mutual concerns where air, land and water quality regulations are now in effect.

It is recognized that these related activities have expended considerable effort in work that is closely related to solid waste management. It is apparent, however, that there can be no good substitute for a unified, comprehensive and visible program where all such matters are consolidated and identified.

Robert E. Sundin, Director
Wyo. Dept. of Environmental Quality
State Office Bldg. West
Cheyenne, Wyoming 82002

state activities

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